MODEL RAILWAY NEWS

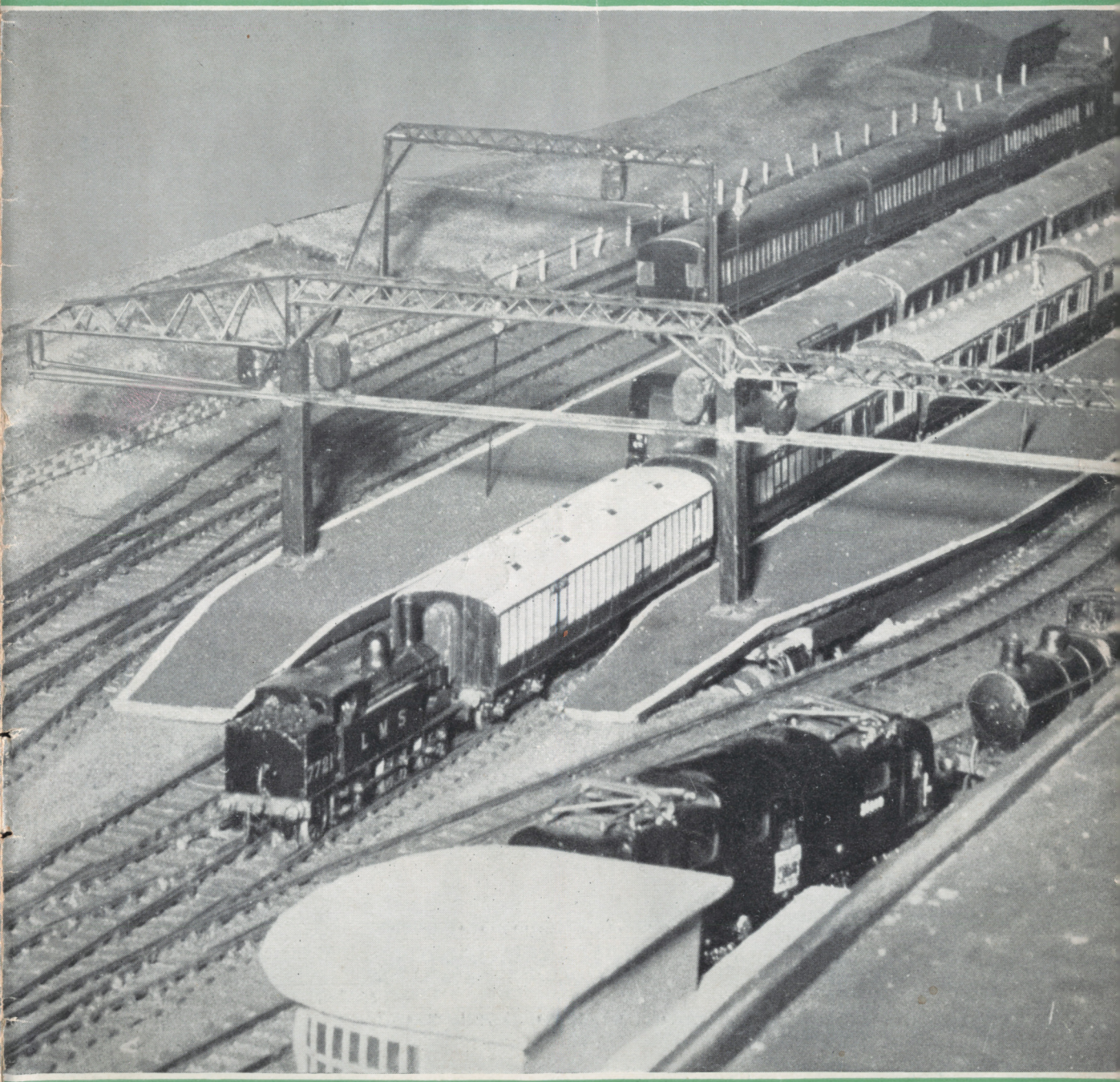
February 1955

1/-

DUBLO 2-6-4T CONVERSION

Shelf-type Baseboard Layout

W. R. Highworth Branch - Pt. 1



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NUCRO WAGON SPRINGING UNITS ("OO" GAUGE ONLY)

We are pleased to introduce the new Nucro Springing Units for those modellers who wish to build their own wagons and improve the running of old favourites. Only two screws are required to fix the unit to the floor of the vehicle. Available for 9 ft. and 10 ft. wheelbase as listed under.

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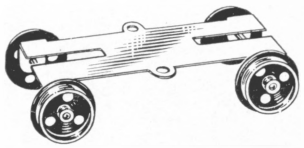
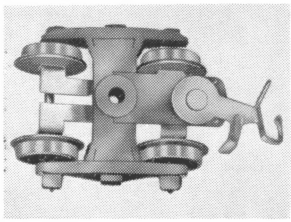


and the new NUCRO PRECISION BOGIES

FITTED WITH THE SPECIAL COUPLING BOSS



Illustrated on the left is a photograph of the new Nucro Bogies, showing the special boss incorporated so that the Peco coupling can easily be fitted. This boss is now fitted to all Nucro bogies, and all the types are available as previously. The price remains the same at 7/6 per pair.

When fitting the coupling it is only necessary to lightly tap the rivet head once the coupling is in place. Although care is needed in doing this, the operation is both efficient and simple.

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R/404	10 ft. H.D. wheels ..	1 8
R/405	9 ft. spoked wheels ..	2 0
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R/407	9 ft. disc wheels ..	1 10
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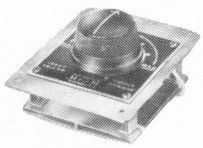

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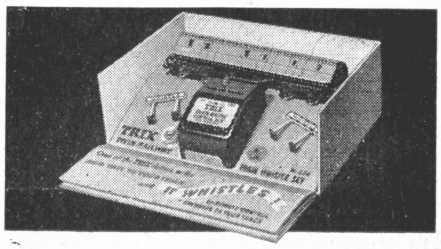

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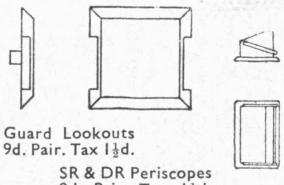

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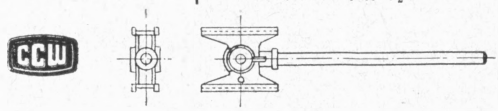

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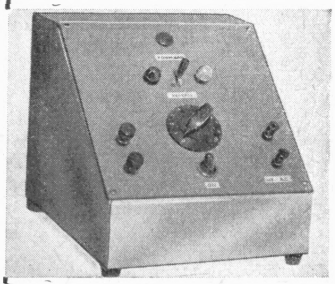

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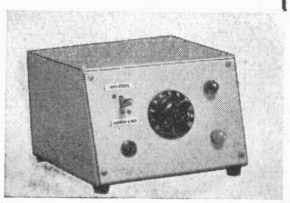

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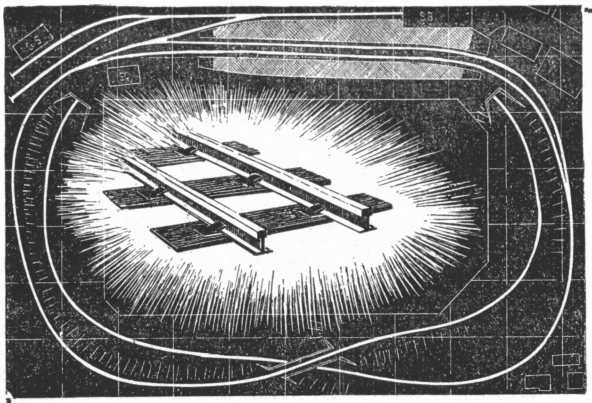

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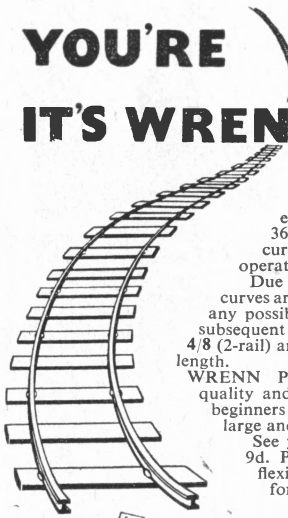

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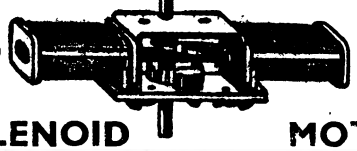
12/6  **12/6**

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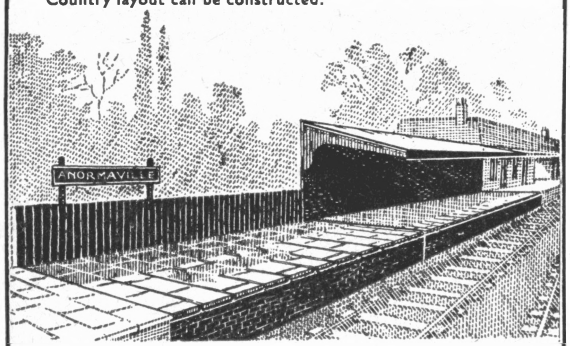

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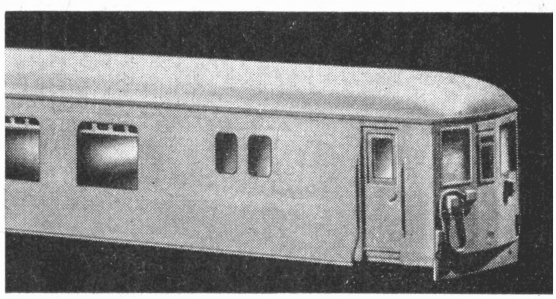

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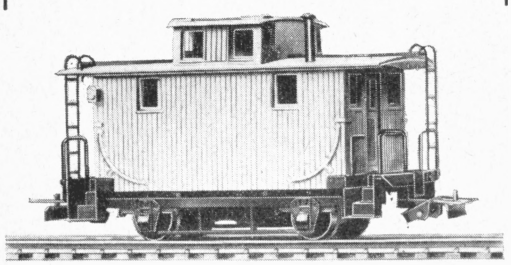

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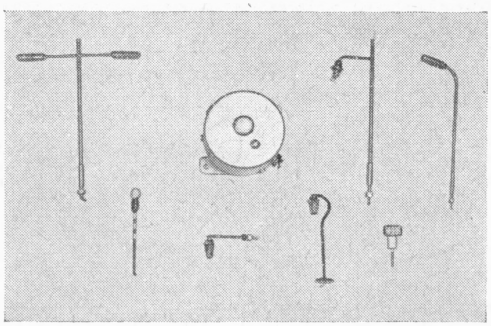

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ON THE COVER

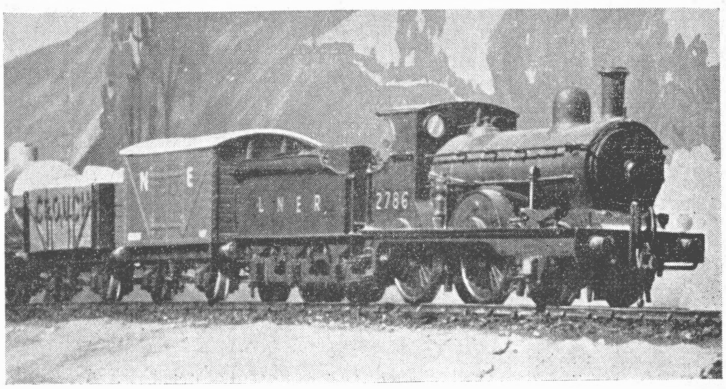
"The Dog Track" is one of the main features of the Manchester Model Railway Society's Annual Exhibition and this view of Mr. J. E. Edgar's end of the layout shows his completely new station as it appeared in the 1954 show held just before Christmas. The track is for two-rail at 24 volts, laid to 18 mm. gauge. When our photographer pressed the button, an L.N.W.R. set pulled out for "Northchurch," hauled by a Webb "Coal Tank" made by the late Alex Jackson.

EDITORIAL

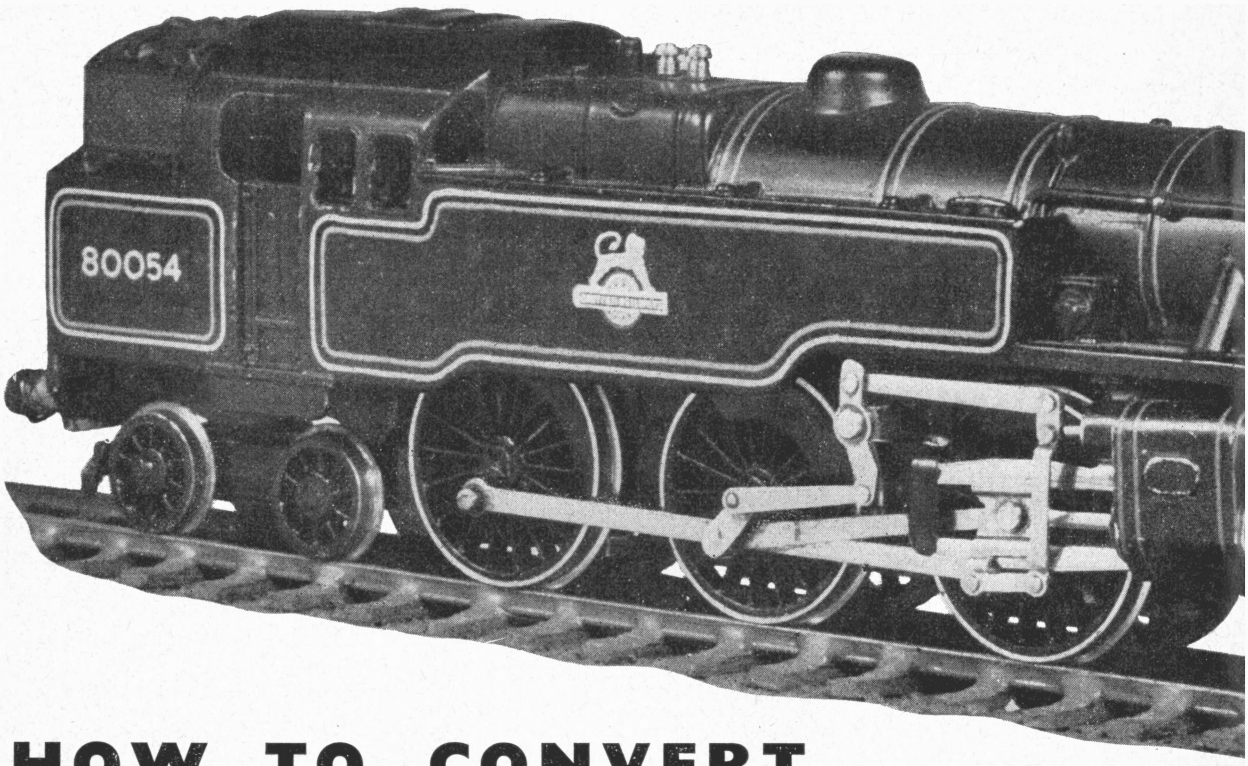
WHEN visiting exhibitions, we are often astonished, and even irritated, to find examples of model locomotives on which obviously a lot of time and energy have been devoted to polishing up the brass, copper and nickel work until it has acquired the lustre usually associated with old-fashioned, ornamental domestic kettles, flower vases, coal scuttles, dinner gongs and the like. Just as often, we wonder why. The only full-size locomotives known to us that even remotely approached such a finish were some very ancient specimens, particularly in foreign countries, having their boilers clothed in brass cleading which was, for a while, kept polished ! In models, however, we have noted the " high polish " technique applied to locomotives of all types and in all sizes from 4-mm. to 1-in. scale, and the effect is, to say the least, always incongruous. Enquiries as to the reason for it have usually brought replies to the effect that it shows up the workmanship that, under a coat of paint, would be invisible. We are far from convinced that this idea is an accurate one, because the rubbing that is required to produce the polish is bound to have modified the appearance of the original workmanship, and for this reason it is no better, and might even be worse, than a coat of paint in giving an erroneous impression.

We suggest that if a model is to be exhibited before it is painted in its final colours, there are two courses open to the exhibitor : If rust is likely to appear, the model can be treated, at all danger-points, with an anti-rust compound, the surplus of which can be removed after the compound has done its work ; but, if rusting is not likely to occur, the model should be given a uniform coat of flat, grey paint all over, which produces a neat, clean finish that is unlikely to modify, or damage, the appearance of the workmanship. Such a treatment is far more in accordance with full-size practice and, therefore, more satisfactory.

The highly-polished finish is a waste of time because it produces an entirely inaccurate result and serves no useful purpose ; in addition to this, it leaves a surface on which paint will not hold properly when the time comes for the model to be painted. And besides all this, it savours too much of the old dealers in scientific apparatus whose shops used to display so-called " model " locomotives, " beautifully constructed and highly finished " ; that is it, the finish was so " high " that it was like nothing on earth, and, with the " models " themselves, is best forgotten !



E4 No. 2786 tops a short, sharp bank with a mixed freight on a pleasant country branch somewhere in the Eastern Counties. E. S. W. Hill of Ilford, Essex, is responsible for this realistic shot of his 4 mm. scale ex-G.E.R. 2-4-0



HOW TO CONVERT YOUR "DUBLO" 2-6-4T

THE long-awaited Hornby-Dublo 2-6-4 Tank was just the job for my Oxted line service, and having obtained one of the first to come on the market I lost no time in converting it to 2-rail. I had previously converted two other Dublo locos, so I didn't anticipate much difficulty . . . and I was right.

A check with a test lead from the track to the brush-plugs showed that the feed to the insulated brush would have to come from the left side of the loco if it was to run the proper way on my layout (which conforms to the "right rail positive" convention), so the insulated wheels would have to go on the left. Most important to get that correct! The next question was where to put the pick-up, and having decided in this case to put it beneath the chassis I rolled up my sleeves and got to work.

With the pony truck and bogie removed, the chassis appeared as in Photo No. 2, and a piece of cardboard packing was then cut to hold the chassis firmly in the vice, as in Photo No. 3. The Hornby pick-up, retained by the long 6 B.A. bolt A, was now removed, together with the suppressor B, the insulated brush-gear C, and the two fibre insulators. All these were placed safely in a box for the time being, along with the two trucks and their bolts.

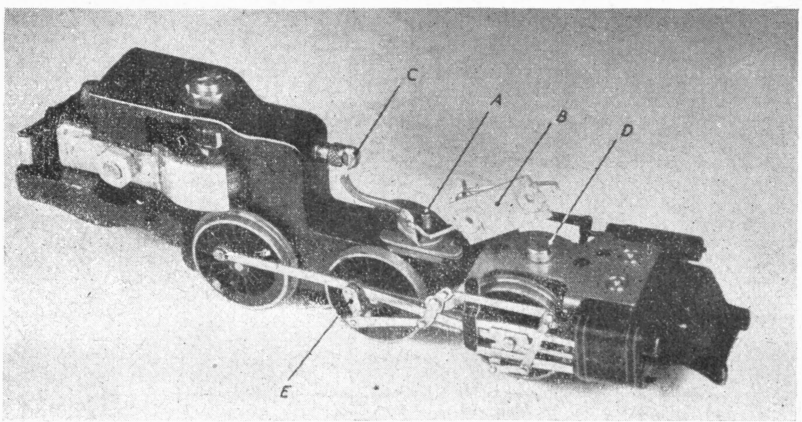


Photo. 2. The chassis as supplied. A: pick-up bolt; B: suppressor; C: insulated brush; D: cylinder retaining bolt; E: return crank

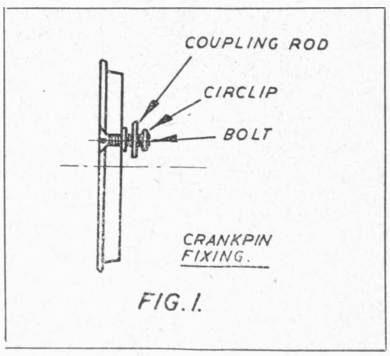


FIG. 1.

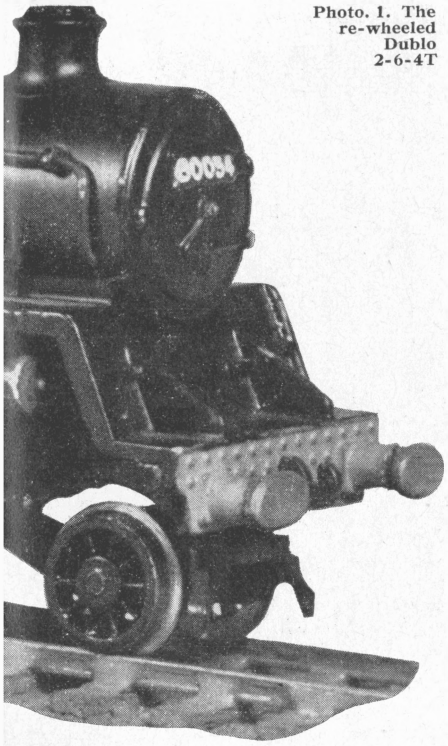


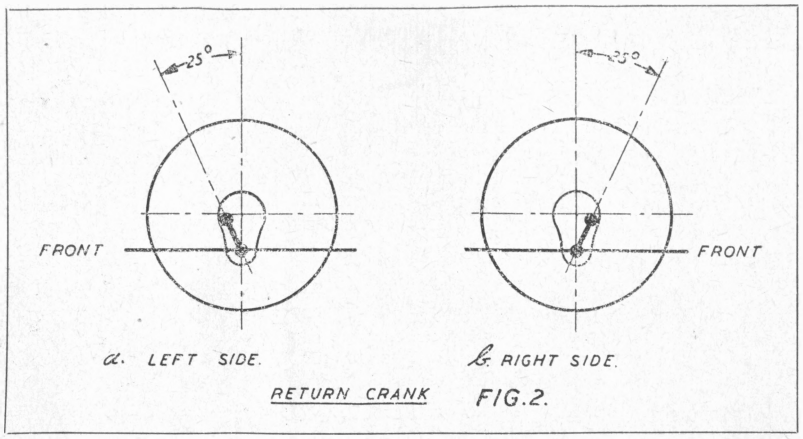
Photo. 1. The re-wheeled Dublo 2-6-4T

by L. E. Carroll

By unscrewing bolt D, the cylinder unit and motion can be swung round clear of the wheels, and we can then saw off the heads of the crank-pins with a piercing saw, slipping a thin slotted shield behind them to protect the motion. On the middle pair of drivers, saw just behind the washer on the back of the return crank E, supporting the cylinders so that they do not fall. The coupling rods are now freed and should join the other bits and pieces—including nut D^1, lurking in a recess beneath the chassis.

Now comes the only tricky bit—removing the old crank-pin from the return crank. To do this, file it flush with the washer, carefully make a centre pop, and then place the arm face down between the jaws of the vice, supporting the cylinders on a block to prevent any strain on the valve gear during this operation. Drill a small pilot hole and then open it out gradually to No. 51 drill size, which will just clear the new crank-pin. Repeat for the other side.

The cylinders and motion now appear as in Photo. No. 4, from which it will be seen that the valve-gear is a slightly simplified version of the prototype. Some modellers will wish to make a certain amount of modification at this stage, though it can be done at a later date if desired. The drawing in the "M.R.N." for October 1951, page 208, plus a good photograph, will help here.



The next step is to remove the wheels, by prising on alternate sides with a screwdriver. Be careful to use a substantial part of the chassis as a fulcrum ! The wheels are then scrapped—unless you want to make a wagon load out of them. The worm wheel alone needs to be retained.

Now we are down to rock bottom—see Photo. No. 5—and can start reconstruction. The Hornby axle holes are just right for scale axles, and personally I use Romford wheels for the conversion : they are of good appearance, are easily fitted, and—more important—can be easily removed. The full-scale wheel diameter is 5 ft. 8 in. and the most suitable model wheel available is 24 mm. This is slightly larger than "scale," so the chassis will need a little filing at F, Photo. No. 5, to ensure adequate clearance.

Before going any further, make the driving wheels up in pairs (remembering that when the left crank is at 6 o'clock the right one is at 9 o'clock) and check for truth by rolling them over a smooth surface. If there is any wobble, try interchanging them or moving them round to different positions. When satisfied, remove one wheel at a time in order to fix the crank-pin (as detailed below), add balance weights to taste, and then, with all wheels again on their axles, paint them. *Now* is the best time.

For the new crank-pins I myself use the scheme (not original) shown in Fig. 1. The crank-pin hole in the wheel is drilled right through (No. 55), tapped 10 B.A., and countersunk at the back so that the head of a $\frac{1}{4}$ in. 10 B.A. countersunk steel bolt lies flush with the spokes. The holes of the Hornby coupling rod are a loosish fit on this bolt, but if you are making new coupling rods you may prefer to file down the protruding threads, leaving only the smooth shank to do duty as the bearing. Smaller holes can then be used in the coupling rod (No. 53 drill).

The amount of side-play now needs to be considered. For 2 ft. 6 in. radius very little is required on the leading and trailing axles, which should be washered to suit 16.5 mm. or 18 mm. gauge, but

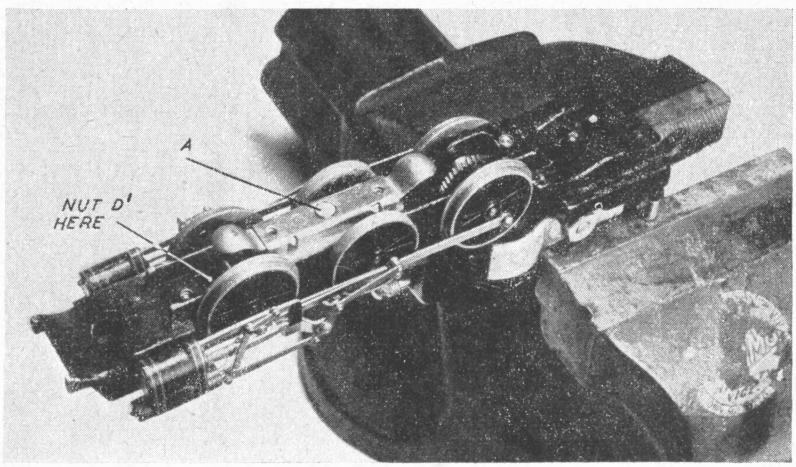


Photo. 3. The chassis held firmly in vice. A: pick-up retaining bolt

the original play should be left on the middle axle so that the flanges can be retained. For tighter radii, allow more sideplay on the leading axle, but try to avoid unnecessary "slop" on the driving axle, or the loco will slew across the track when reversed. The amount of play left on the crank-pins will also depend on the minimum radius used, and their ends can be filed down accordingly.

By this time the wheels should be about dry, so take one off its axle and, not forgetting the necessary washers, insert the axle in the chassis and replace the wheel. Repeat with the other matched pairs, adding the worm wheel to the driving axle but leaving it loose for the time being. The coupling rods can now be fitted, being retained by "circlips" of fine wire soldered over the

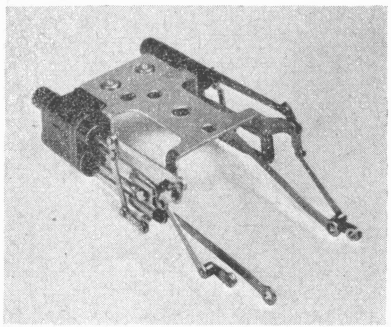


Photo. 4. Cylinders and motion assembly

ends of the leading and trailing crank-pins. This operation will be simpler if a small piece of pierced card is slipped over the pin first, to act as a spacer. A slit will enable the card to be withdrawn afterwards without straining anything.

Next, replace the cylinder unit and motion, turn the cranks on one side of the loco to bottom dead centre, and slip the connecting rod into position on the middle crank-pin. Follow this with the card spacer and finally the return crank. The latter should be inclined at an angle of 25 deg. from the vertical towards the front of the loco (see Fig. 2), and then soldered to the end of the pin. Repeat for the other side, and then spin the wheels to make sure everything moves freely.

Now comes the matter of the pick-up. I have tried various forms at different times, but on the whole I prefer phosphor-bronze strips bearing on the backs of the tyres. Being rigid in the vertical plane they do not vibrate, and therefore never squeak or arc, no matter what their position in relation to the wheel; but being very flexible laterally they can be quite short yet still give good contact with light pressure. They are much more tolerant of side-play than similar strips bearing on the running faces of the tyres. Nickel-silver rims keep so clean (on nickel-silver track, at least) that there is no need for the scraping—and wearing!—action of a

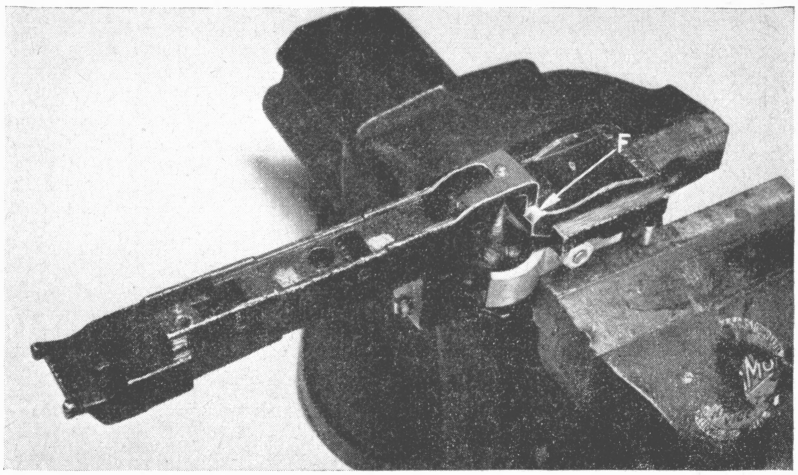
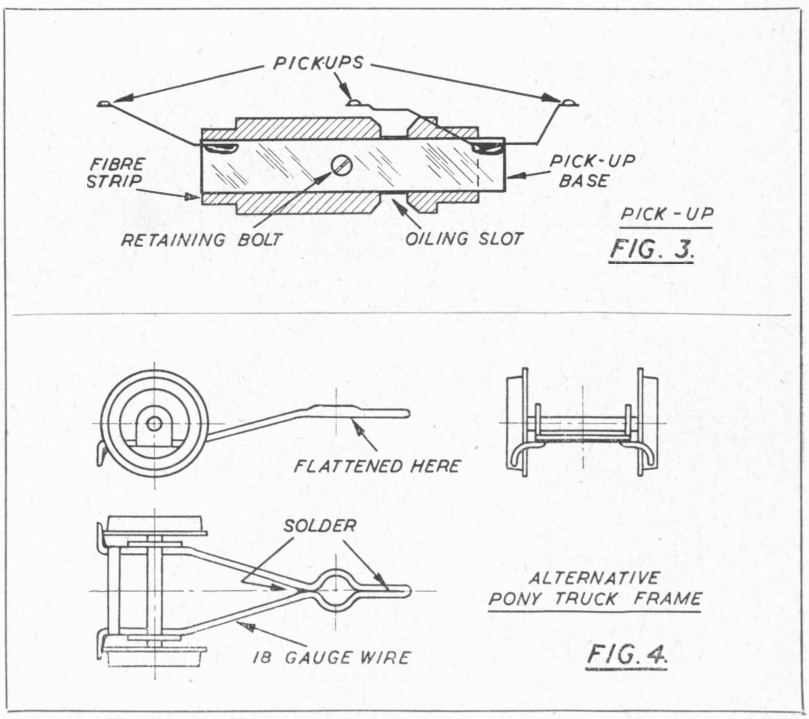


Photo. 5. The chassis stripped and held upside down in vice. F: filing for wheel-clearance

tread contact. On the 0-6-2 Hornby tank I have fitted the pick-up above the chassis, but on the 2-6-4, due to the valve gear and the high level of the lower edge of the tank sides I mounted it underneath, where it is accessible and practically invisible.

Going back to the odds and ends, rescue now the two stamped fibre strips—and the nut. But leave the bolt: a cheese-headed one will be more convenient than the inquisitive-child-defying type supplied as standard!

The foundation of the new pick-up is a strip of brass cut $\frac{1}{8}$ in. longer than the large fibre strip and $\frac{1}{4}$ in. wide—see Fig. 3. Leaving the overhang at the rear and using the fibre as a guide, drill the central hole to clear 6 B.A.—No. 33 drill. Then fit it in position, using the new bolt and replacing the small fibre strip. The tabs, suppressor, and brush gear can be replaced later. Cut two strips of about .005 in. phosphor-bronze (or brass) 1/12 in. wide by $1\frac{3}{8}$ in. and $\frac{3}{4}$ in. long respectively. Bend as shown in Fig. 3 and Photo. No. 6, and solder them in position. (Personally I add a small blob of solder to the contact end of each strip: this gives a nice sweet action and takes the wear.) The contacts for the leading and middle wheels are completely hidden behind the wheels, and the remaining one is set

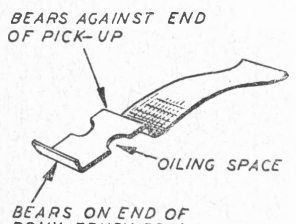


Next Month . . .

BASEBOARD MATERIALS
Don't waste a lot of time and energy using faulty or unsuitable materials. Someone ' in the know " tells you how to buy sound timber and how to choose the most convenient substance on which to build your layout.

HIGHWORTH STATION
In the second part of his article, C. Gordon Watford supplies description, track plan and a batch of fine photos to provide information for modellers interested in Great Western Branch termini.

BO-BO DIESEL-ELECTRIC NO. 10800
Another first-class drawing of a prototype prepared with the modeller in mind, giving all that is required without the distraction of unwanted detail. The locomotive is a general purpose design and has plenty of room for a motor.


BEARS AGAINST END OF PICK-UP
OILING SPACE
BEARS ON END OF PONY TRUCK FRAME
PONY TRUCK SPRING AS SEEN WITH THE LOCO INVERTED
FIG. 5.

well back so that (when painted matt black) it does not show. It will be found that this pick-up is very efficient electrically and gives little friction.

So far I have assumed the use of the cheaper non-insulated wheels on one side of the loco, but the nickel-silver insulated type keep so much cleaner that I always use them on both sides. This means either bonding the tyre to the wheel centre (e.g. by a screwed plug inserted at the back) or fitting a second pick-up. I use the latter. The main pick-up is reduced in width (Photo. No. 6) so that the other one can lie alongside it with about 1 mm. clearance. The second pick-up is secured to the fibre strip by two short cheese-headed 10 B.A. brass bolts, which are placed so that their projecting ends bear against the under side of the chassis (*not* the axle housings !) when the main retaining bolt is tightened up. The shanks are filed down to allow 1.25 mm. to protrude through the holes tapped in the fibre, and local removal of the paint ensures good contact. A second set of P.B. contacts is then soldered in position. Ensure that contact is being made on both sides under full side-play.

At this point, see that the brass brush-holders are tapped in fairly close to the commutator, so that brush-wobble cannot set in when the carbon wears down. Then replace the suppressor and insulated brush-gear and adjust the brush retaining-plugs to secure the lightest tension consistent with no increase in sparking, running the motor at moderate speed on a test lead. Finally, tighten up the worm wheel grub screws and hand-test again to check the motion for free running under power.

Now, back to the wee box once more for the bogie and pony truck. The bogie casting we can use as it is, except for filing back the guard irons to give clearance for the 12 mm. wheels which are to replace the existing ones. The pony truck, however, is rather far removed from the prototype version, and I would really recommend building up a new frame as suggested in Fig. 4. Alternatively, some extensive filing can be carried out on the original casting so that its profile and front elevation are more like the prototype. In either case it will be advisable to spring this truck to ensure good road-holding. This is very easily done by slipping a phosphor-bronze leaf spring (see Fig. 5) under the front end of the pick-up so that it bears firmly on that part of the truck frame to the rear of the bolt hole. It will be found that this is 100 per cent. effective, as well as invisible and damage-proof.

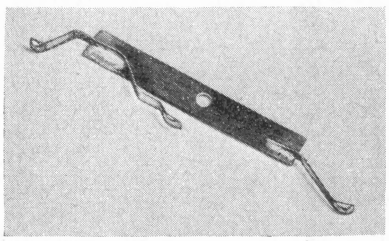


Photo. 6. Single-sided pick-up (inverted)

When fitting the carrying wheels it is important to avoid breaking down the insulating surface of the axles. The inner faces of the wheel bosses should be slightly countersunk to provide an easy entry for the axles, and the latter should also be bevelled off at an acute angle. The first wheel of each pair may be placed face downwards on the vice, with the jaws opened far enough to allow the boss to lie between them, and the axle tapped in with a series of light blows until it projects about $\frac{1}{8}$ in. beyond the wheel. Then test the insulation, and if necessary tap the axle further through until all is well. Now bevel the other end of the axle and thread on to it a fibre washer, the truck chassis, and a second fibre washer before introducing it into the second wheel, which has, in turn, been placed on top of the vice. Tap the axle home as before, placing a 14.5 mm. spacer between the wheel backs to ensure the correct back-to-back clearance. The projecting ends of the axle can now be sawn off, using a piece of drilled shim-brass as a shield for the wheels.

Before refitting the trucks to the chassis, check finally with a test lead to make sure that all the insulation is intact. Then oil up, replace the superstructure and the trucks, and you are all set for a track test. If this is satisfactory, all that now remains to be done is to adjust the magnetic shunt to give the desired performance. It should be good !

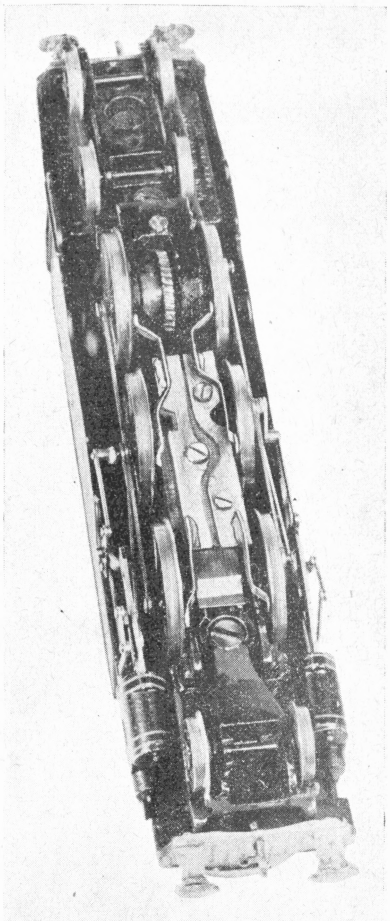
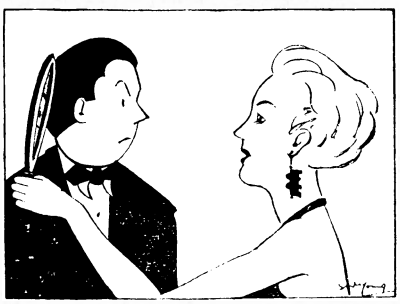
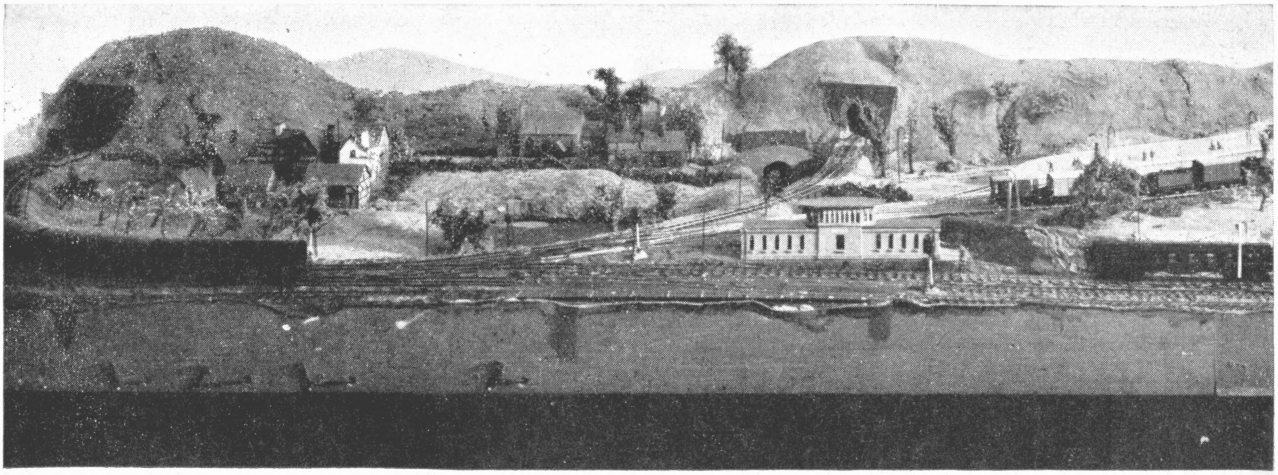


Photo. 7. Inverted view of the converted chassis with double-sided pick-up


"Just right for the club dinner, dear. Don't worry about the motors; I've taken them out."



"HANG IT ON THE

by G. W. M. Lush

WAS there ever a model railway with plenty of room? Apart of course from extravagances built "regardless" out of advertising funds, and perhaps a few garden railways, the first thing confronting the ordinary modeller is how to combine realism with restrictions of space imposed by home surroundings.

This latest effort in 4 mm. scale may be of interest because it takes a form, constructionally, that has not been described before to my knowledge. The programme was to build as realistic a layout, with the maximum operating possibilities, as could be fitted into the playroom of an old house just rebuilt. The railway was allocated a share of the room, but the competing interests required space also for other hobbies, games such as darts and bagatelle, and a small snack bar.

Everybody who has struggled with drawings of "pipe dream" layouts will need no reminding of the space demanded by main line curves, to say nothing of station platforms. So the question arises, how much railway is there room for, and how can that much be fitted in? Since these two aspects must be considered together, they were in this case planned together.

Next to the playroom is a garage, separated by a 4½-in. brick wall, and it was realised that the wall could have been positioned differently to allow

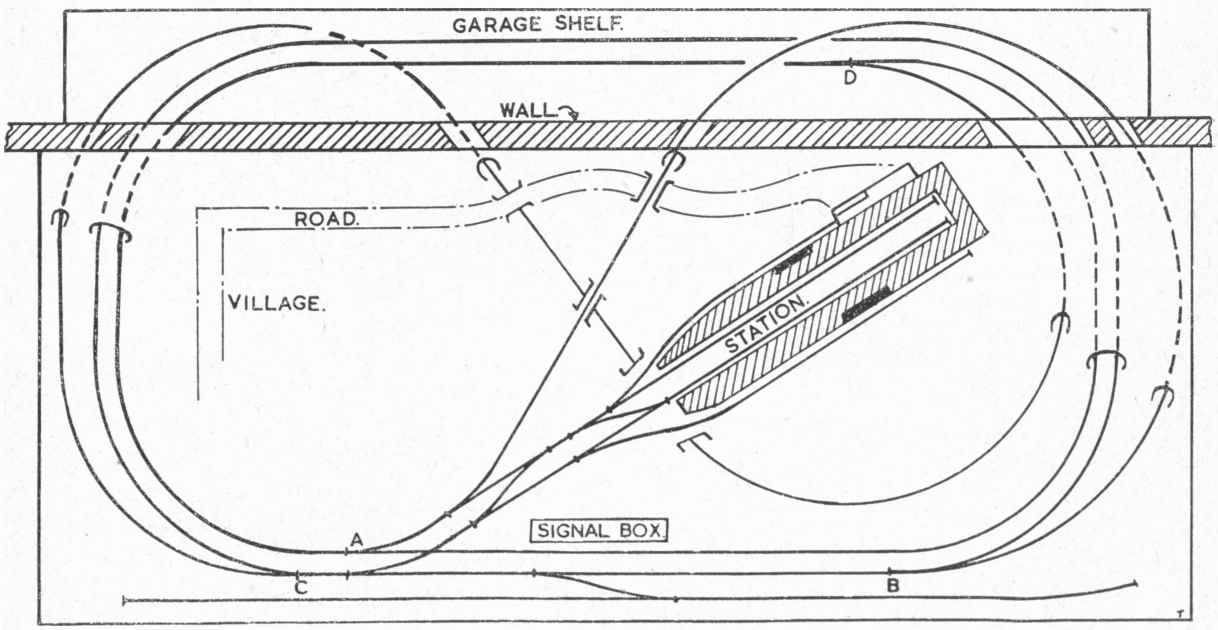
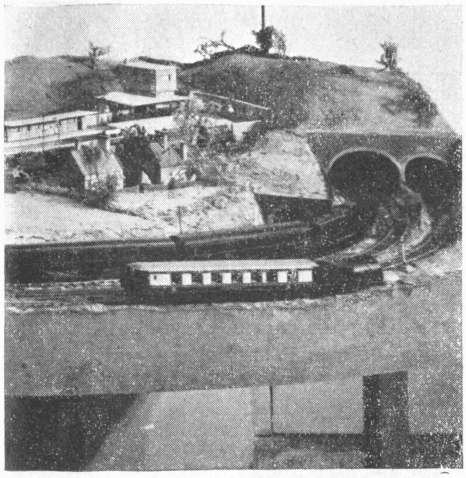


FIG. 2.



W A L L "

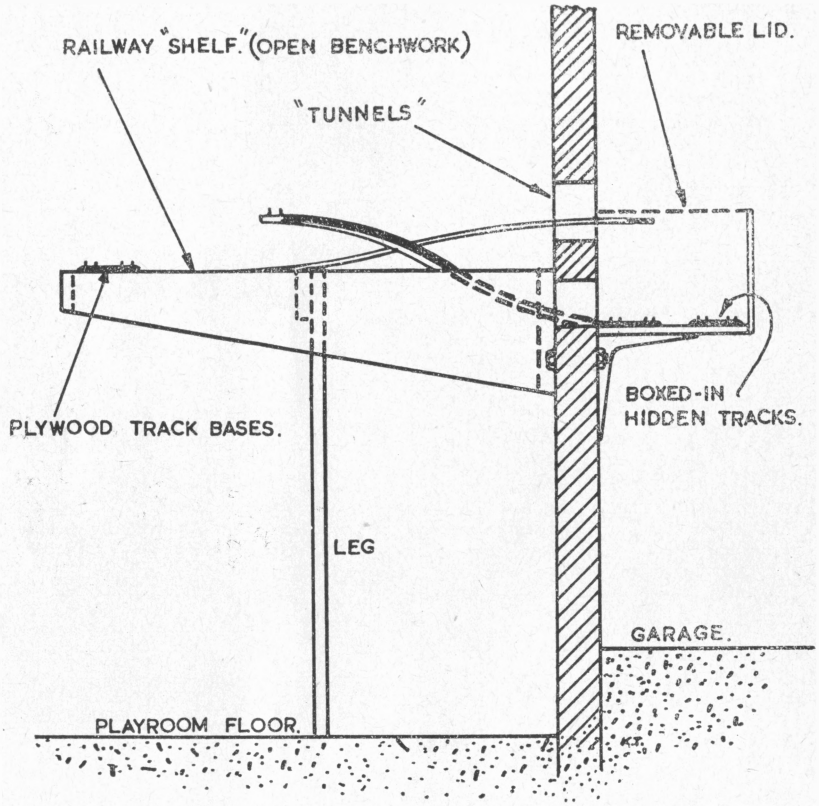


FIG. 1.

about eighteen inches more playroom and less garage. The sort of layout that was beginning to take shape in theory was, however, of a sort that needed scenic disguise to prevent too much "round and roundness," so the idea emerged that the eighteen inches and another six inches for the wall and plaster might be hidden in and through the wall, saving two feet of width in the room, and resulting in a form of construction essentially a very wide shelf.

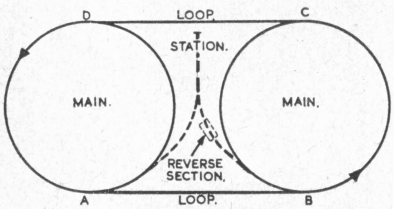
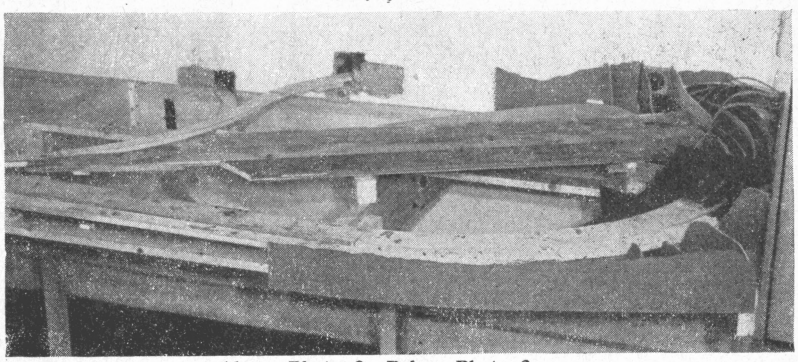


FIG. 3.

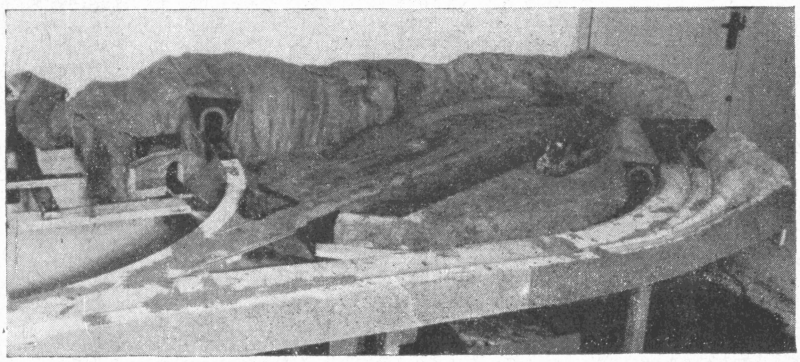
At first it was proposed to cantilever the structure from the wall, but even when securely bolted through this was thought to be asking a lot of the wall itself, and legs were added quite near the wall to strengthen the job without spoiling the "shelf" principle which gives most valuable storage space clear of legs at the front, underneath the railway, plus unrestricted access to the wiring.

The Basic Design

The sketch, Fig. 1, shows the construction principle, and the plan, Fig. 2, indicates the track layout adopted. This gives the appearance of main line and branch line running, plus a useful sized terminus station. There is a double main



Above: Photo. 2. Below: Photo. 3



line with the equivalent of reversing loops disguised as " branches," and the equivalent simplified layout, Fig. 3 shows, with letters corresponding to those in Fig. 2, that there is no electrical reverse section at all. When the terminus is added such a section does appear, but it is dealt with quite simply, as indicated later. Simplicity was striven for in the trackwork—there is only one common crossing and one concealed point, all the rest being simple turnouts.

Baseboard Work

The construction presented no difficulty—bricks were easily cut out of the wall for the various tunnel roads. The open bench-work principle is used, with plywood supports cut to shape for the tracks, supported in turn by a skeleton framework. The whole of the scenic work and all track bases were completed to the plan before any track, except those short pieces in tunnels not later accessible, was laid. Photo. 2 shows this stage of construction, with the track bases installed through the wall, one of the attachment bolts and three legs showing, and some of the scenery framework and a tunnel mouth taking shape at one end.

The scenic work was done in papier mache. After some experience with

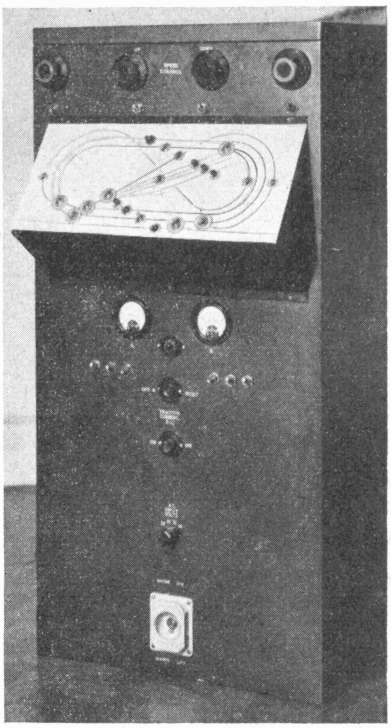


Photo. 5

consists of old newspapers, with almost any adhesive, either flour or size or a suitable proprietary glue, and enough water to make a paste with the paper after it is torn up or shredded (a tedious job by hand !). If some of the paper can be in the form of shavings, so much the better, but shiny " art " paper should be avoided. The whole lot is boiled, with occasional stirring, to a sloppy paste, grey in colour, and at this stage with a decidedly nasty smell. It is trowelled or " handed " on as hot as it can be managed, and Photo. 3 shows one section of hessian partly covered. The job can be done in stages, as the papier mache sets, or dries, slowly, and in the process acquires considerable strength. It may develop a mould on the surface, but when dry, this can be brushed off, and will not return. Colouring is easy—anything that will colour a newspaper will do, either water soluble distemper-based or flat oil paint, and a nice matt surface is easily obtained—the job should consist of daubing rather than careful painting to achieve the desired effect.

Buildings—mostly made up from kits and nearly all with internal illumination, roads, and in fact the landscape generally, were added at this stage. This is the reverse of the usual procedure of laying track first, but seems logical and presented no difficulty. Trees were made from various forms of natural growth suitably tailored, but these and such things as telegraph poles were put aside until the end of the job to avoid damage to them during actual railway construction.

At this stage railway building proper could commence !

Electrical Equipment

Just as the track plan was laid out in detail and to exact dimensions before the job was started, so the electrical designing was finished and recorded in advance. It was decided to concentrate the electrical supply gear, signal and track circuit relays, control desk, meters, and all terminals and main switchgear, in a separate steel cabinet, intended as an office cupboard, and to connect this to the railway " shelf " by a two-inch flexible metallic conduit, through which all wiring passes, Photo. 4. This gives some limited freedom of movement for the cabinet, and is very convenient.

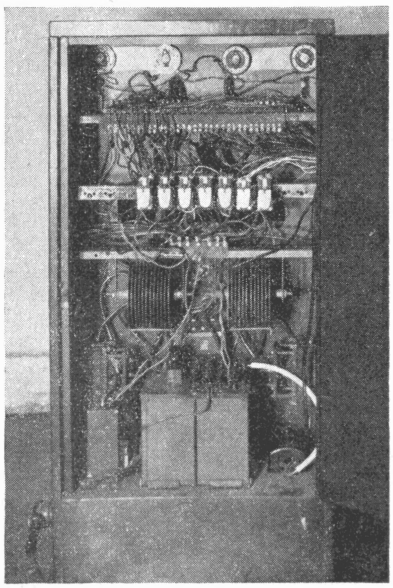


Photo. 4

other materials I much prefer this because it is easy to manage in construction, it is tough and does not tend to crumble or powder, it can be coloured right through if desired and it costs practically nothing. It is supported on a rough framework made of odd scraps of wood covered by bits of chicken netting—this in turn covered by hessian or sacking, with newspaper stuffing to " smooth it off." The papier mache

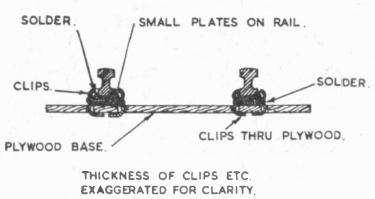


FIG. 4.

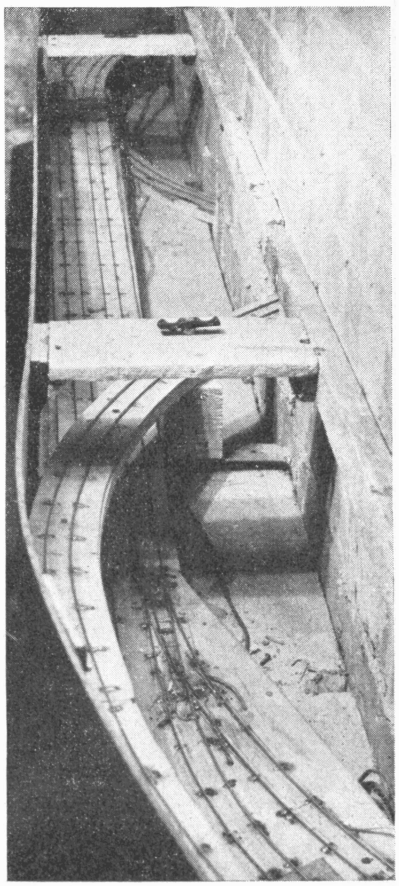


Photo. 6

With one or two exceptions (scheduled for alteration) all points are electrically operated by self-switching motors, enabling a changeover switch to be used on the panel with positive indication of point setting. Frogs are switched by contacts concealed in the moving point blades themselves, and associated track switching, to prevent conflicting movements is controlled by

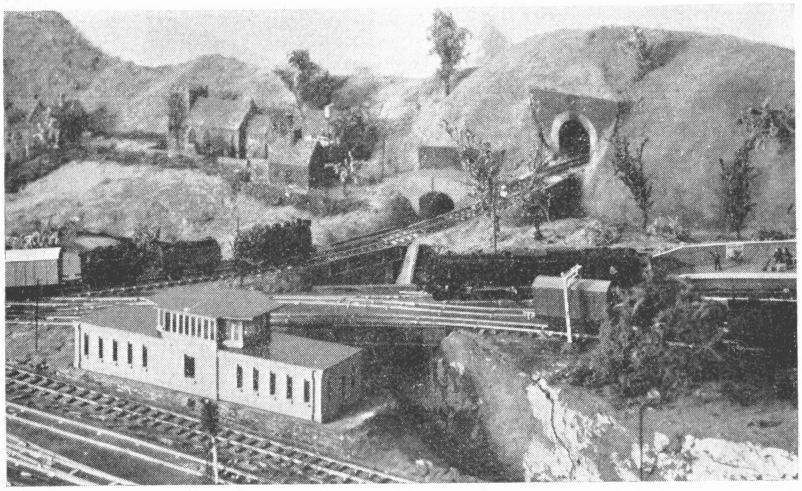


Photo. 7

telephone type relays, switched with the point motors, which also carry contacts for the signal circuits.

The main transformer, of 300 watts rating, was specially wound to give the required outputs, the large number of secondaries needed being unobtainable in a single commercial unit. Outputs are available for the various bulbs in buildings, in signals, on station platforms and so on ; also for point motors, signal solenoids and other minor purposes. The two main track circuit secondaries, each with a range of switched tappings, feed a pair of selenium rectifiers through tapped chokes to improve the regulation. The resulting 14 volt outputs, of opposite polarity with a common earth, after passing through a triple pole thermal circuit breaker, are divided to four main controllers, respectively for up, down, station and goods yard. These are colour coded in accordance with the colours on the track diagram which forms the basis of the control switchboard. Reversing switches are associated with the controllers, which are of the stepped inductance type, free from the heating and contact troubles of resistance types. On the track diagram, Photo. 5, are located the section switches, point switches, and buttons for " dead ends " ; also a button controlling a relay which switches the only section where polarity changes with the equivalent of a reversing loop—at the exit from the terminus. As is inherent in 2-rail control, the reversing switches determine a constant direction of movement irrespective of which way a locomotive is facing. The signals are almost all of multiple-aspect colour-light type, several with position-light route indicators, using " grain-of-wheat " bulbs. Because these bulbs vary considerably in brightness for a given voltage and their life varies accordingly, it is arranged for the " earth " side of each bulb to be separately returned to tappings on a small auto-transformer across the 3.5 volt winding which supplies these signal lights, so that each can be given its appropriate voltage.

Permanent Way

Track, where visible, is of GEM or Hamblings B-type, and all points are built up on plastic sheet bases and tailored to suit the location, closed frogs being standardised. The out-of-sight track in the garage (which is boxed in, but with inspection covers) is built on the lines of the sketch, Fig. 4, with sole-plates soldered to the rail base free to slide to meet temperature variations, in clips soldered to staples clinched through the thin plywood which forms the bed of these sections. This is cheap and satisfactory for this application. A view of the hidden track in the garage is in Photo. 6.

The rolling stock and locomotive power is an assortment of Graham Farish, Exley, and other makes, pending time in which to build more hand-made stock. With closed frogs and generous flange-ways no problems arise with any commercial wheels. Acro couplers are standardised, and have replaced an earlier type with mechanical ramps.

With this basically simple layout a very satisfactory range of operation is possible, and the appearance may be judged from some of the pictures. Anyone faced (and who is not these days) with the space problem, but with an odd room or space next door, might do worse than consider this solution, and " hang it on the wall."

TRAIN LAMPS in 7mm. SCALE

by G. Henfrey

THESE lamps, designed and made for use on locomotives and brake vans, are very easily constructed, are of scale dimensions, and undoubtedly fill a noticeable gap on a railway system. They have several advantages, namely, negligible cost, quick construction and realistic appearance. The accompanying sketch hardly needs amplification owing to its simplicity of design, but a few words may be of help.

Lamp Body

Consists of a solid wood cube.

Lamp Handle

An ordinary pin with head filed off to a point, and the whole pin bent, as shown, and pressed into position.

Lamp Face

Again, a pin, cut down to 2 mm. length, filed to a point and pressed into the centre of the lamp face, which it then forms.

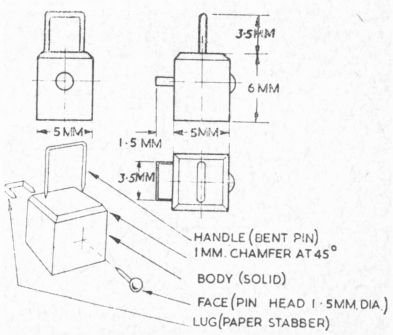
Fixing Lug

A small paper " stabber " (with disc discarded) and claws shortened and filed to points, as shown. Press gently into rear of lamp body.

Note : Wooden body will *not* split if the above parts are pressed in *gently*, and only deep enough to hold. (In case of lamp face press *right in.*)

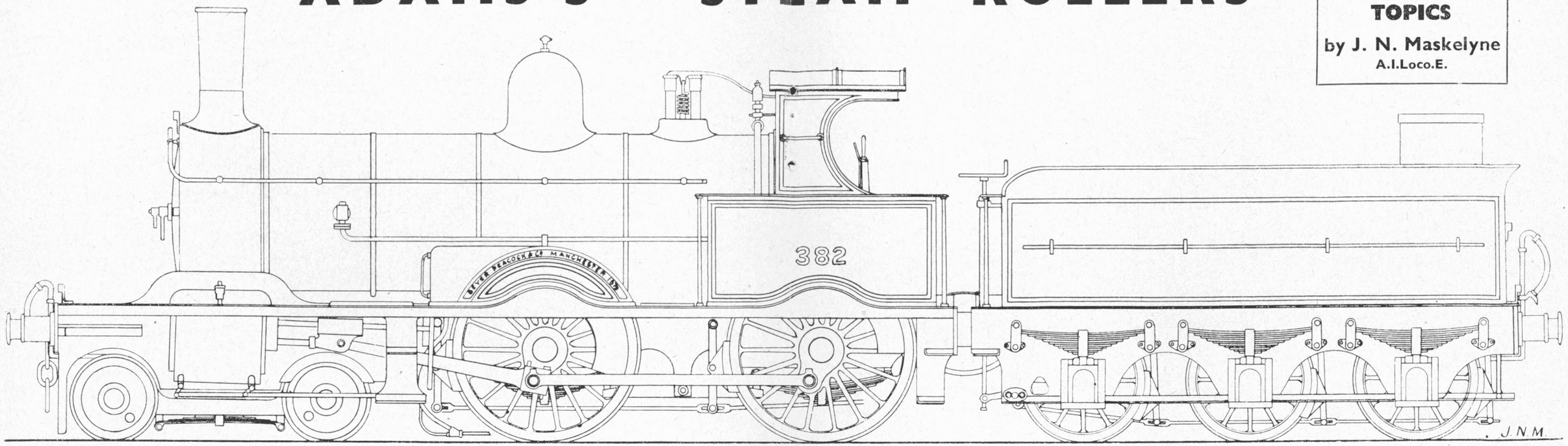
Colour Scheme

Face : Unpainted (leave polished pin head).
Body : L.M.S. (Midland) red.
Handle : Black.
Lug : Black.



ADAMS'S "STEAM ROLLERS"

RAILWAY TOPICS
by J. N. Maskelyne
A.I.Loco.E.



IN 12 0 1 2 3 4 5 6 7 8 9 10 20 FT.

MY drawing reproduced here shows one of a class of small 4-4-0 mixed-traffic engines designed for the London and South Western Railway in 1879 ; there were twelve of these engines, all built by Beyer Peacock & Co. Ltd., at Gorton, and officially known as the " 380 " class, though they were almost universally referred to as the " Steam Rollers " on account of the solid bogie wheels and the rather long stove-pipe chimneys. I am indebted to Mr. R. G. Dettmar, of Ashtead, for permission to publish the drawing ; I made it for him because one of his customers had ordered an " O "-gauge model to represent one of these engines in the original condition, and thus it is seen in the drawing.

These quaint little engines were the first 4-4-0s designed by William Adams for the L.S.W.R., and they are interesting to compare with his last (see " M.R.N.," April, 1952, page 69). I made my first acquaintance with the " Steam Rollers " about 1902, when I had just learnt how to ride a bicycle and used to ride from my home at Wandsworth Common to Wimbledon where there was, to me, a wonderful pathway alongside the L.S.W.R. main line from Wimbledon to Raynes Park. It is still there ; but how different the surroundings and the purely " railway " scenery ! From that path, however, I would often see a " Steam Roller " shunting in the sidings on the opposite side of the line ; sometimes another would go by on a passenger train bound for Epsom and Leatherhead, or Woking and Guildford, or, more rarely, for Aldershot. Once, I saw one on an excursion to Portsmouth, but whether the little engine went all the way with it I do not know ; more than likely, she did. Usually, these engines worked van trains, fruit trains and fast mixed goods trains, and generally made themselves useful in that particular department. At the time of which I am writing, these engines had passed their twenty-first birthday about twelve months before ; yet it was not until thirteen years later, in 1914, that the first were withdrawn, four of them being condemned in that year. Exactly ten years later still, in 1924, another four went to the scrap-heap, and in 1925, there followed the last four, which, incidentally, included No. 380, the first engine of the class, at the ripe old age of fifty-six ! Solid, sturdy and stalwart, always thoroughly reliable, they must have earned their cost many times over.

The drawing gives a scale of feet and inches, so that it can be used for any scale of model ; but the following may be useful :

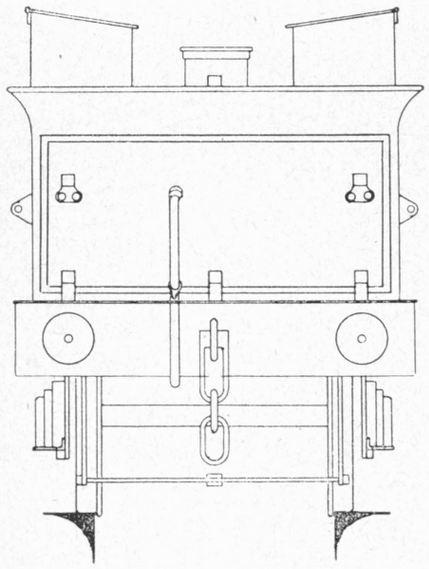
Wheel diameters : bogie, 2 ft. 6 in.; coupled, 5 ft. 7 in. Boiler barrel, 4 ft. 8 in. diameter outside the clothing plates, and the centre-line was 7 ft. above rail level. The working pressure was 140 p.s.i. The leading overhang was 1 ft. 9 in., the trailing 4 ft. 1 in. The wheelbase was divided into : 6 ft. 6 in. plus 6 ft. 8½ in. plus 8 ft. 6 in., totalling 21 ft. 8½ in. The leading bufferbeam was 8 ft. long and 1 ft. 6 in. high, the top edge being slightly above the running plate, which butted up against the back of the bufferbeam. The cylinder centres were 6 ft. 6 in. apart, across the engine, and the coupling-rods were outside the connecting-rods. The width over cab sides was 7 ft.

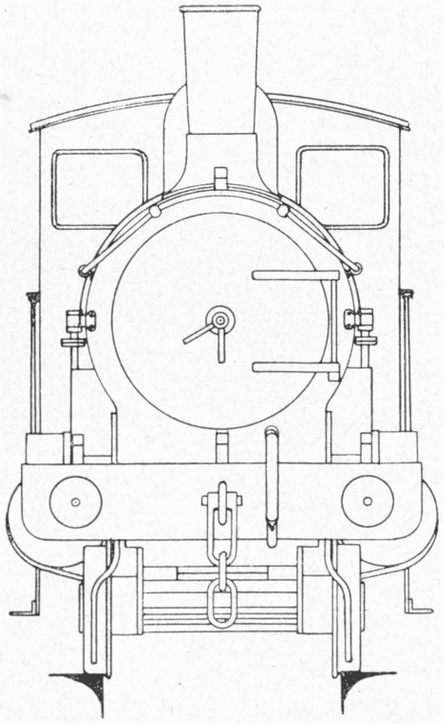
The tender was something of an oddity in that it was very short for a 6-wheeler. Its wheelbase was 10 ft. 3 in., equally divided, and its wheels were 3 ft. 9¾ in. dia. The total wheelbase of engine and tender was 40 ft. 1 in., and the extreme length over buffers was 47 ft. 9¼ in. The width over the sides of the tank was 7 ft. 3½ in., and over the footplating 8 ft. The bufferbeam was 7 ft. 11 in. long by 1 ft. 6 in. wide, while the footplating rested on the top edge.

I must add that the long life of nine of these engines was due to the 1914-18 war, for actually nine of them were withdrawn in 1914. Five of these were, however, put back into service after receiving a thorough overhaul, the other four being broken up. These

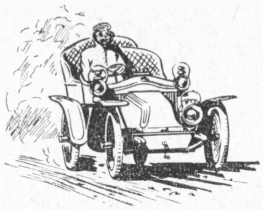
(*Continued on page 40*)

DRAWINGS FULL-SIZE FOR 7MM SCALE





"Pre-grouping" Road Vehicles



by J. H. Ahern F.R.P.S.

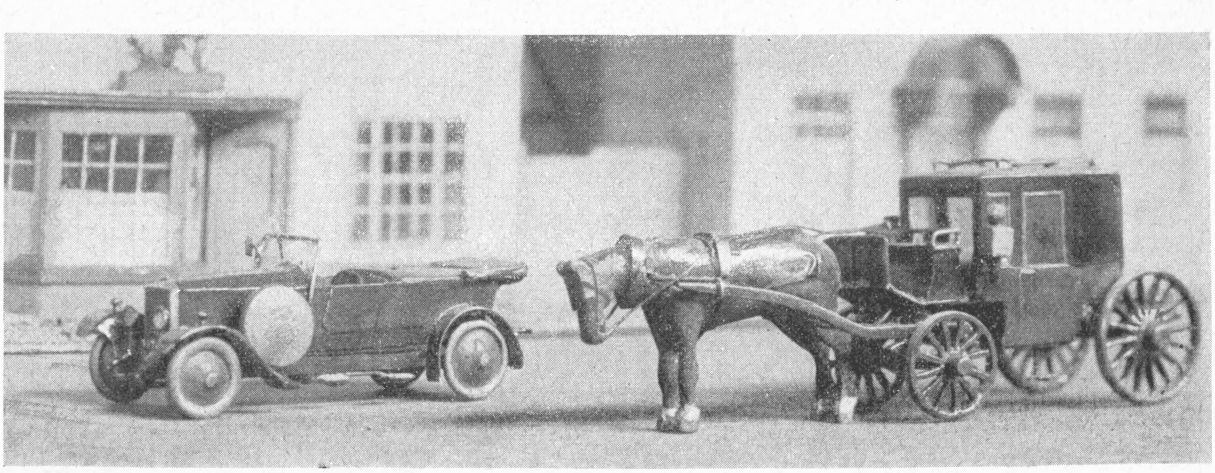
THE photographs with this article show a small collection of road vehicles on the M.V.R., which might be found appropriate for any "period" model railway. For the four-wheeler, the difficulty was to obtain reliable dimensions from which to prepare a drawing. The Science Museum very kindly produced a good photograph of a brougham, but that is not quite the same vehicle, although first cousin to it, and it is often difficult to estimate dimensions from photographs. Then we heard that a four-wheeler was usually to be found opposite the main arrival platform at one of the London termini. That was not very helpful as far as I was concerned because at the time I was engaged on work which kept me away from London. But one day my wife armed herself with a foot rule and paid a visit to the location indicated. She soon made friends with the driver, and with his kind assistance prepared a fully dimensioned sketch. I have included drawings, made from her notes, as they may be useful to other readers. Information about the old London "growlers" is not so easy to come by now.

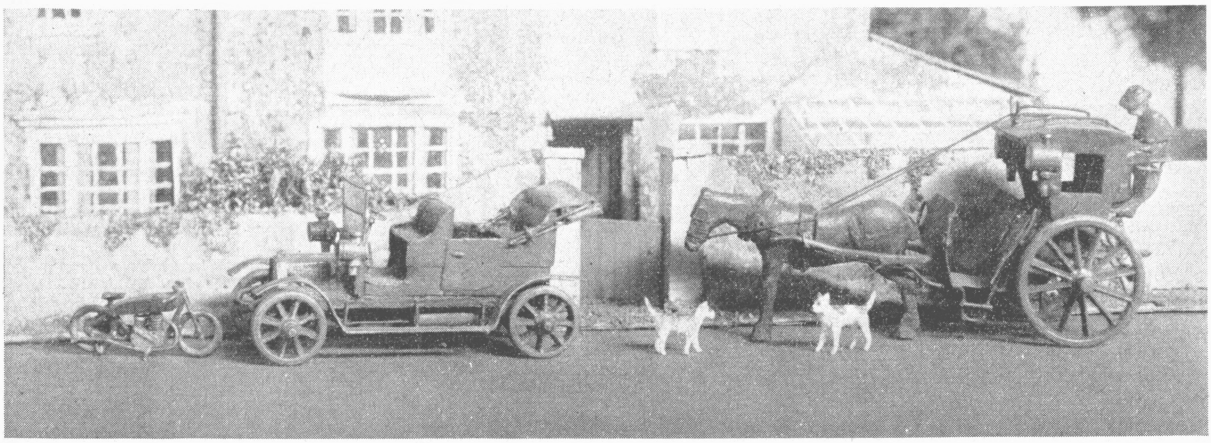
Diagram B shows the method of construction used. The sides and front are made in one piece from the thinnest kind of bristol board. Two layers were used, the openings in the inner one being slightly smaller to represent the window frames ; the windows are thin celluloid. The body is just a block of wood cut as shown, or two blocks glued together, if thought more convenient. If the inside surfaces are painted black, the fact that the body is practically solid, except behind the windows, will not be apparent. Construction is quite straightforward except for the mounting of the wheels. The springs must be built up from wire (preferably square section) and solder. The horizontal rods or bars, on which they are mounted, are forced into holes in the body block, and the axle soldered to the springs. The front swivelling truck is similar to those fitted to most other horse vehicles, and as the springs are hardly visible, being behind the wheels, they might be dodged. The back ones, on the other hand, do show, and ought to be reproduced with reasonable care. The colour can be glossy black all over, or black above and dark green below the waist line ; the wheels and shafts, and the swivelling truck, can be bright yellow to relieve the drabness. Note the shape of the roof ; it has a slight curve both ways. In the side elevation this curve is, if anything, slightly exaggerated.

The horse—but the breeding of "OO" gauge horses is really a special industry, and had better wait for a separate article. In the meantime, note the appropriate depressed attitude, with the head well down and the tarpaulin over the hind quarters : a piece of cellophane carefully blackened with indian ink.

The car in the same picture is quite a faithful reproduction of the writer's 3-litre Invicta. It is simpler to make than it looks. The body is shaped from a piece of $\frac{5}{8}$ in. by $\frac{3}{8}$ in. stripwood, as diagram C, with sides of thin bristol board added. These sides extend forward only as far as the point where the bonnet begins, and thereby serve to mark the divisions between the bonnet and body. Little slips of thin paper are stuck on to represent the doors. The vehicle is modelled with the tonneau cover on, so that the rear part can be left solid. It is only necessary to make a slight hollow with sandpaper to suggest the characteristic sag of a well worn tonneau cover in the middle. The chassis is another scrap of stripwood, $\frac{1}{8}$ in. thick, and the wheels are attached with lill pins, pushed into the wood. The wheels came off a Japanese toy train, and are just the right size. In this particular case they ought to be of the wire spoke type, but that was deemed a little too much of a good thing in 4 mm. scale. The nickel radiator shell was made by sticking strips of silver paper to the bonnet.

Turning to the second photograph, it will be seen that the hansom cab has acquired something appropriate in the way of wheels. They were a gift from Mr. N. F. Fletcher, and improve the appearance very much. The driver was cut with a piercing saw from $\frac{1}{4}$ in. thick three-ply, as diagram D, and finished with small files and sandpaper. The reader may be wondering how the brim of the hat was produced, since it could not have been cut out of the solid. Actually, it was quite simple : a piece of thin card was cut about $\frac{3}{8}$ in. or $\frac{1}{2}$ in. square ; the exact size does not matter. A small hole was pierced in it so that it would just sit on the old boy's head, allowing enough of the crown to show. It was glued in place, and when the glue





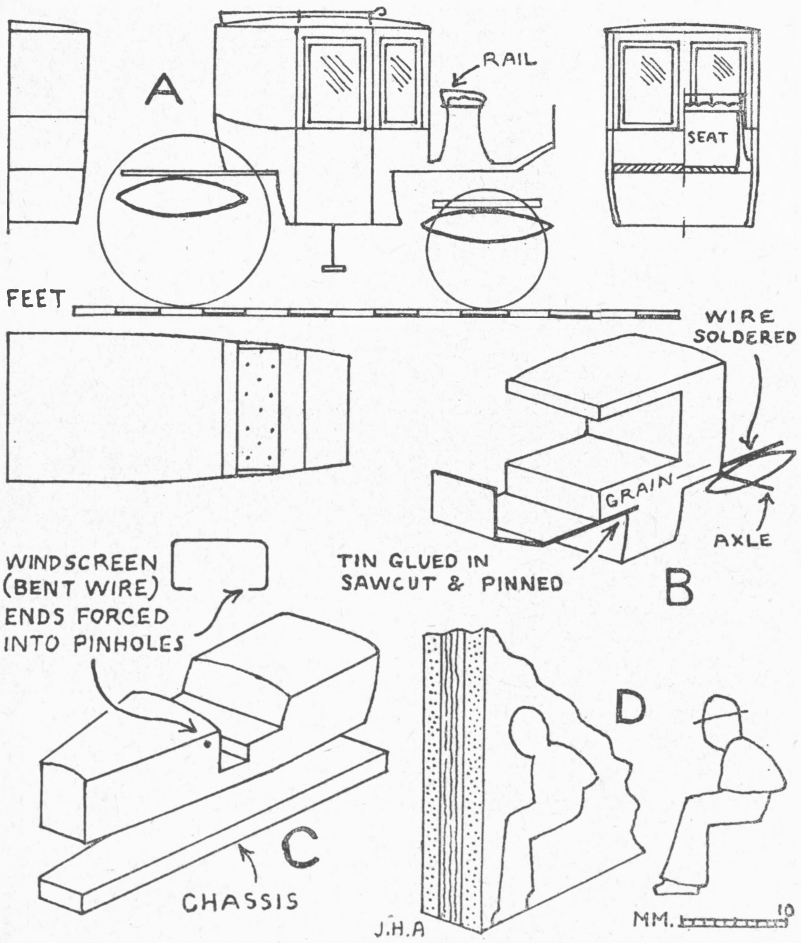
was hard, and a coat of shellac had been added, most of the card was carefully snipped away with nail scissors, a little at a time.

This method would not be so good for standing figures but it is quite useful for seated ones.

The dogs are from the Vacy-Ash kennels, and are a marvel of fine workmanship. They are made from 10 amp fuse wire and solder.

Left of the hansom is an old touring car which was, perhaps, the most laborious of these vehicles to make, as there are no continuous lines anywhere, and each bit had to be made and stuck on separately. The chassis, as usual, is shaped from a bit of $\frac{1}{2}$ in. by $\frac{1}{8}$ in. stripwood, the bonnet, and all the other bits, being glued on top of it. The big old-fashioned headlamps are pieces of $\frac{1}{8}$ in. outside diameter brass tube, drilled through with a small drill for a brass nail which serves for the funnel and the oil container underneath. This is fairly obvious in the photograph. They are soldered to a piece of wire which is soldered to the instrument board, and the ends of which are bent into a loop which surrounds the brass nail, underneath the lamp body. The same applies to the lamps on the hansom. The only really fiddling part of this vehicle was the windscreen : a piece of celluloid had to be fixed with Durofix into a fine brass wire frame. I may point out, however, that a simpler way to get out of the difficulty would be to use a piece of perspex or thin glass without any wire frame at all. Then a thin line of oil paint all round the edge, applied before mounting on the vehicle, would serve to suggest the frame. On cars of that period the windscreen frame was often made of stained and polished mahogany, not of metal. Thick celluloid could be tried, instead of perspex or glass, but there is always a slight risk that it may assume an inappropriate curve after a time. The body and wings are painted a nice bright yellow, for that was long before the appearance of the rather sombre blues, and beiges, and greys, which find favour nowadays. People were not afraid of a bit of colour at the beginning of the century.

The motor-cycle on the extreme left is made in much the same way as the pedal cycle in the December 1945 issue, except that slightly thicker wire was used. The single cylinder is part of a 10-B.A. screw, tapped into a scrap of brass, which was then filed up to resemble, more or less, the crankcase and gearbox, and soldered to the frame. The tank is another bit of brass, soldered to the top horizontal member ; the exhaust pipe is a piece of nickel wire ; a piece of sheet tin, with rounded ends, soldered between the crankcase and the wheel centre, represents a chain cover.



LAYOUT IDEAS FROM FULL-SIZE PRACTICE

Swindon to Highworth-1

Today, only freight trains run on the Highworth Branch of the Western Region. C. Gordon Watford travelled on the line about a year before it was closed to passenger traffic on March 2nd, 1953. Here is the information he collected.

FROM Swindon, a single track branch line meanders its way through delightful countryside for six and a half miles, serving three small villages, and terminating at the somewhat larger village of Highworth. The ballast is overgrown with weeds between the sleepers, and the line abounds in sharp curves, on several of which check rails are provided. There are no less than sixteen acute reverse curves in the last 2½ miles of track. It is due to this, and to a certain amount of unevenness that speed is restricted to 25 m.p.h. over the entire branch, and to 15 m.p.h. and 5 m.p.h. over certain portions of the route. It appears that the drivers of the 14xx class 0-4-2 tank locos, which are alone permitted to work over this branch, have to use their own discretion and experience to know when to ease down speed. These locos are quite suited to this type of work, but their tanks have a very small water capacity.

Leaving from Platform No. 7 at Swindon, we follow the main line in the London direction for about half a mile, then swing away to the left, picking up our tablet as we leave the main line. Passing beneath a stone bridge, we run past a large military camp, to which run a multitude of private sidings. Leaving these behind, we reach Stratton Station, 2¼ miles from Swindon. Here, there is a comparatively spacious goods yard, which boasts three sidings. A hand-crane of latticed iron, painted grey, is installed here, together with a loading-gauge over the through line. A corrugated-iron hut, erected on a brick foundation, about two feet off the ground, serves as a goods shed.

A mile and a quarter further on, the end of the block section is reached on arrival at Kingsdown Road Signalbox. The signalbox is brick-built, with horizontal planking above the level of the windows, painted cream. The roof is tiled, and pitched at an angle of 50 deg., and typical Great Western "ball and spike" finials surmount each end of the roof ridge. There are no longer any windows in the lower part of the building, the only two having been bricked up many years ago. From the Swindon direction a facing point leads to a private siding, on the Highworth side of the signalbox.

The line now rises and falls frequently, and the first of the acute curves is encountered. Soon, Stanton station is entered, 4½ miles from Swindon. This consists of a single platform, with a station building similar to, but larger than Stratton. A trailing point gives access to a siding which ends in a brick-faced grass loading bank about four feet high. Beyond this is the stationmaster's house. From the platform, a fenced path leads down to a lane, which the line crosses by means of a stone bridge. Stanton Station is illustrated in Photograph No. 1, looking north-east, towards Highworth. The station building is practically identical to that of Hannington.

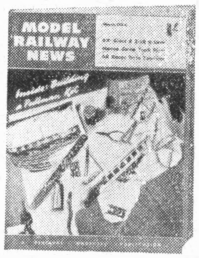
Midway between Stanton and the next station, Hannington, the line crosses the main road B.4019 by way of a gated level crossing, protected in each direction by a fixed distant signal. There is a small hut beside the level crossing which at one time was inhabited by a gate-keeper, but it is now boarded up and no longer in use. The gates of the level crossing are kept shut against the rail traffic, and when a train approaches, it is necessary for it to halt, in order to allow the guard of the train to get down and open the gates. The train then proceeds clear of the crossing and stops again, whereupon the guard closes the gates behind him, and climbs back into the train. The whole of this procedure takes only three minutes.

Rounding yet another right-angle curve, we arrive in sight of Hannington Station, 5¼ miles from Swindon. From beneath the bridge which carries a country road over the line, a loop line commences, running the length of the platform. From a trailing point on the loop line, a siding shoots off at a tangent into a small goods yard, which boasts a loading-gauge, but no goods shed. The platform is long enough to accommodate three coaches and a tank loco. Photograph No. 2 is a view of the station buildings at Hannington. The design is very simple, but is very attractive, and typically Great Western. The windows have six panes, and do not open. The wooden window sills are 1½ in. deep. The addition at the north-east end of the main building is used as a general storeroom. The walls are constructed of timber, painted cream, and the roof, pitched at an angle of 50 deg., is covered with corrugated asbestos, left its natural colour. The chimney stack is built in brown brick.

Between Hannington and Highworth the line describes a series of irregular semi-circles, which are negotiated at a very slow speed, to the accompaniment of protesting groans from the wheels of the rolling stock.

The approach to Highworth is made up a gradient of 1 in 43. The line opens out into double track through the station, joining up again beyond the platform into single track for a distance of about 20 yd., past the small cattle dock at the end of the platform. The whole station is set on an extremely sharp curve, so sharp indeed, that a check rail is provided at the approach to the station, and also at the beginning of the platform line. A trailing point is set in some yards from the platform end, giving access to a short goods

HAVE YOUR PHOTOGRAPH ON THE COVER



Can you take a **good** photograph of your layout ? If so, you may be just the person we need. The "M.R.N." is looking for top-quality cover pictures of model (**not** prototype) railway interest. The composition should be able to fit our cover design and prints, if submitted, should be of at least whole-plate size. Alternatively, smaller prints will be considered if accompanied by the negative.

Send **your** picture to the Editor, "M.R.N.," 19-20, Noel Street, London, W.1. The photographer will be paid two guineas on publication of his picture.

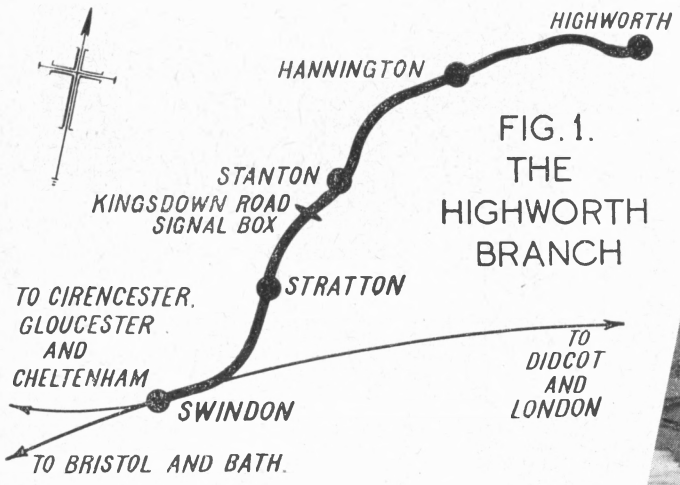
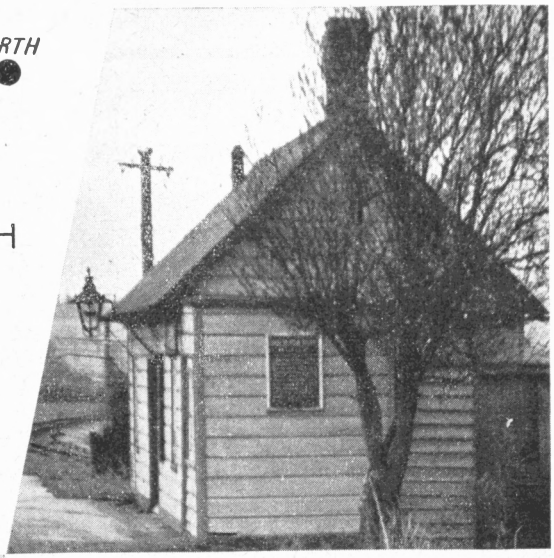


FIG. 1. THE HIGHWORTH BRANCH



Above: Photo. 1. Stanton Station building

Above: Photo. 2. Hannington Station building

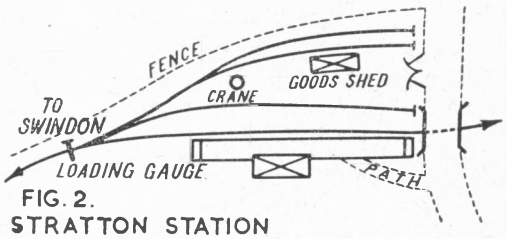


FIG. 2. STRATTON STATION

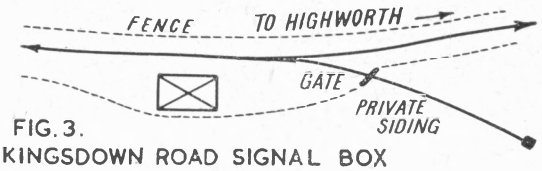
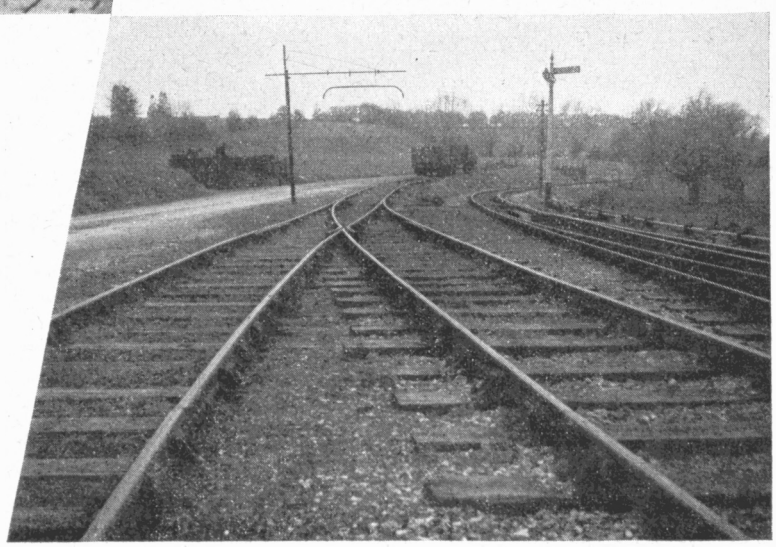


FIG. 3. KINGSDOWN ROAD SIGNAL BOX

Below: Photo. 3. Approach to Highworth, looking towards Swindon



siding, which runs alongside a lane. From this, in turn, another track leads through a small goods shed, to terminate in buffers at the platform end. An interesting thing is that the lane serving the station runs right along beside the siding, and across this lane, at a distance of about 12 ft., is a coal bunker. It is a three sided erection, built of sleepers and sheets of corrugated iron. On the station platform, there is a small rock garden at the N.E. end, and a covered ground-frame at the opposite end of the platform. Another small ground frame, consisting of one lever, is installed opposite the N.E. end of the platform. Behind this is a small corrugated iron hut bearing the title " Lamp Room."

Photograph No. 3 is a general view of the approach to Highworth, looking

towards Swindon. On the left is the coal bunker, situated at a distance of about 12 ft. from the siding, which rises up a gradient of 1 in 210, and ends in an orthodox buffer stop. The line from Swindon curves in from the right, up a gradient of 1 in 43, and a check rail has been provided on the graded curve. A corrugated iron hut is located below the bank at the end of the siding. The only other features of interest in the photograph are the loading gauge, and the signal, which is typically Great Western, and worked from the ground frame on the platform. A multitude of weeds can be observed growing in the ballast between the sleepers of the siding on the left, and emphasises the neglect into which the branch line has sadly fallen.

NEXT MONTH: HIGHWORTH STATION

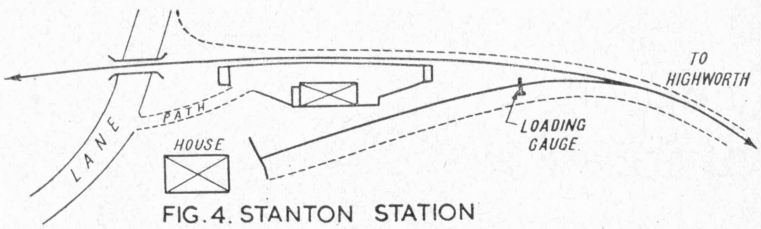


FIG. 4. STANTON STATION

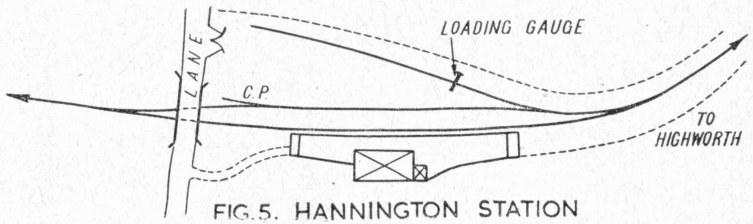


FIG. 5. HANNINGTON STATION

FOOLPROOF COLLECTOR FOR "OUTSIDE THIRD"

by A. E. Woolley, B.Sc.(Eng)., A.M.I.E.E.

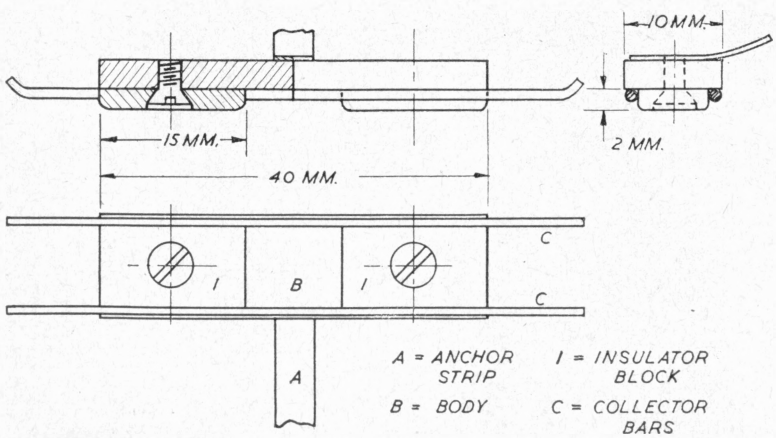
MY experience in 7 mm. fine scale with outside conductor rail has shown the necessity of limiting the downward movement of the collector bar in a positive manner so that it cannot touch the running rail but, nevertheless, ensuring that it bears on the conductor rail with adequate pressure.

The present description relates to a collector I have developed to fulfil these conditions with the utmost simplicity of construction and complete absence of need for subsequent adjustment. My aim was achieved by utilising insulating material to fend off the collector bars from the running rail instead of comparatively complicated adjustable rigging to space off the collector from the loco frames.

The sketch shows the form of construction adopted. Of the dimensions quoted only those running laterally across the track are critical : they are quoted for "7 mm. fine" but can easily be adapted to other scales. The remaining dimensions were chosen to suit materials to hand, namely 19 S.W.G. wire collector bars and Tufnol strip $\frac{5}{16}$ in. wide by .085 in. thick (this is between 5/64 in. and 3/32 in.).

The use of wire and insulator of these dimensions results in a clearance of about 1 mm. being maintained between running rail and collector where a gap in the conductor rail occurs.

Firstly, the "body" of the device was made from $\frac{1}{16}$ in. brass 40 mm. long by 10 mm. wide. This was drilled and tapped 8 BA on the centre line 7.5 mm. from each end. (A thicker or heavier material could be used if additional weight is required.) The two insulating blocks were cut 15 mm. long from the Tufnol strip and drilled centrally so as to take an 8 BA countersunk bolt with the surface of the head well below the surface of the material. After the edges of these blocks had been rounded with a file on the same side as the countersink, both blocks were screwed to the body by means of the holes already provided and aligned with a straightedge. Finally the wires were sweated on, being held in position during the soldering operation by being pressed against the blocks.



So much for the collector. To attach it to the loco it is necessary only to use a "sloppy" piece of thin brass strip soldered to the collector at one end and screwed to an insulating stretcher between the loco frames at the other. The strip may be of any convenient length and can rise directly from collector to motor if there is an appreciable distance lengthwise between the two or may be folded back to an anchorage directly above the collector. Its function, apart from conducting the traction current, is only to maintain the correct lateral positioning of the collector since the weight of the latter provides ample pressure on the conductor rail.

Admittedly this device is more conspicuous than the conventional pattern but it will not be noticed if used on motor bogies where it is masked by a dummy collector shoe attached to the usual beam between axle boxes. Even on steam-outline models it would not be conspicuous if judiciously placed (e.g. beneath foot steps) and any lack of invisibility would be amply repaid in thorough reliability. Note that when contact surfaces become worn it will be a matter of moments to replace the whole device by a spare since it is attached only by one soldered joint and requires no accurate positioning or adjustment.

The usual anti-squeak measures may be employed. Weighting the collector in this case is most easily done by making the body of lead. Also an additional step in squeak reduction may be taken by making the motor-end anchorage (since this does not need to be rigid) of soft rubber which tends to "smother" those undesirable squeak vibrations. I have used an ordinary pencil-eraser very effectively in this connection.

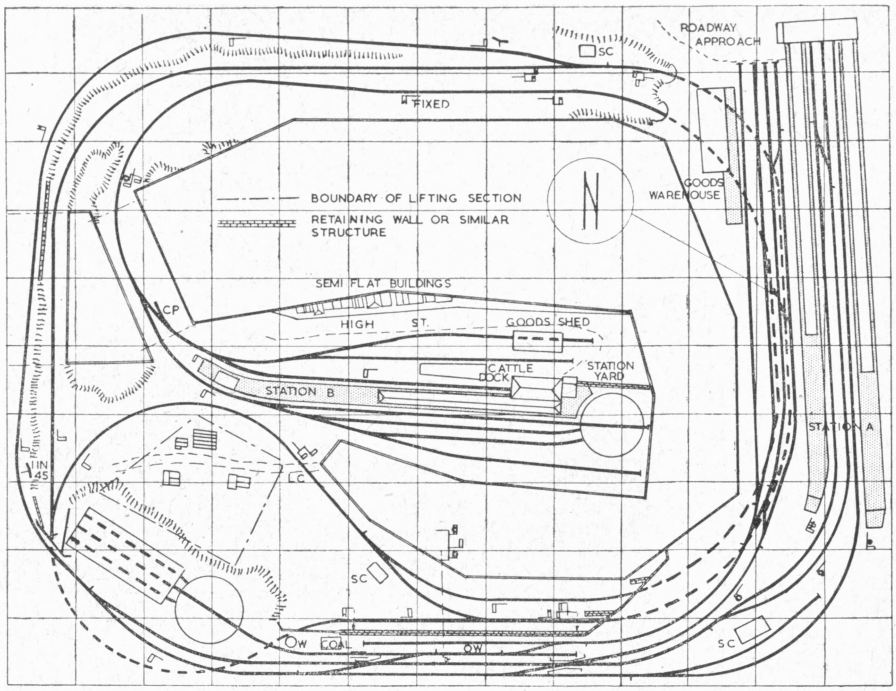
LAYOUT PAGE

This layout has been designed to suit one of the larger bedrooms of the average three-bedroomed suburban house, or alternatively, it would fit into the normal type of garage quite well. Although 13 ft. by 10 ft. is quite a generous space for these days it has not been thought a good idea to put in five or six stations. Two really decent station layouts have been incorporated but the nature of the layout is such that it is possible to simulate the effect of trains calling at imaginary intermediate stations.

The plan includes a point-to-point, a continuous oval and a return loop run.

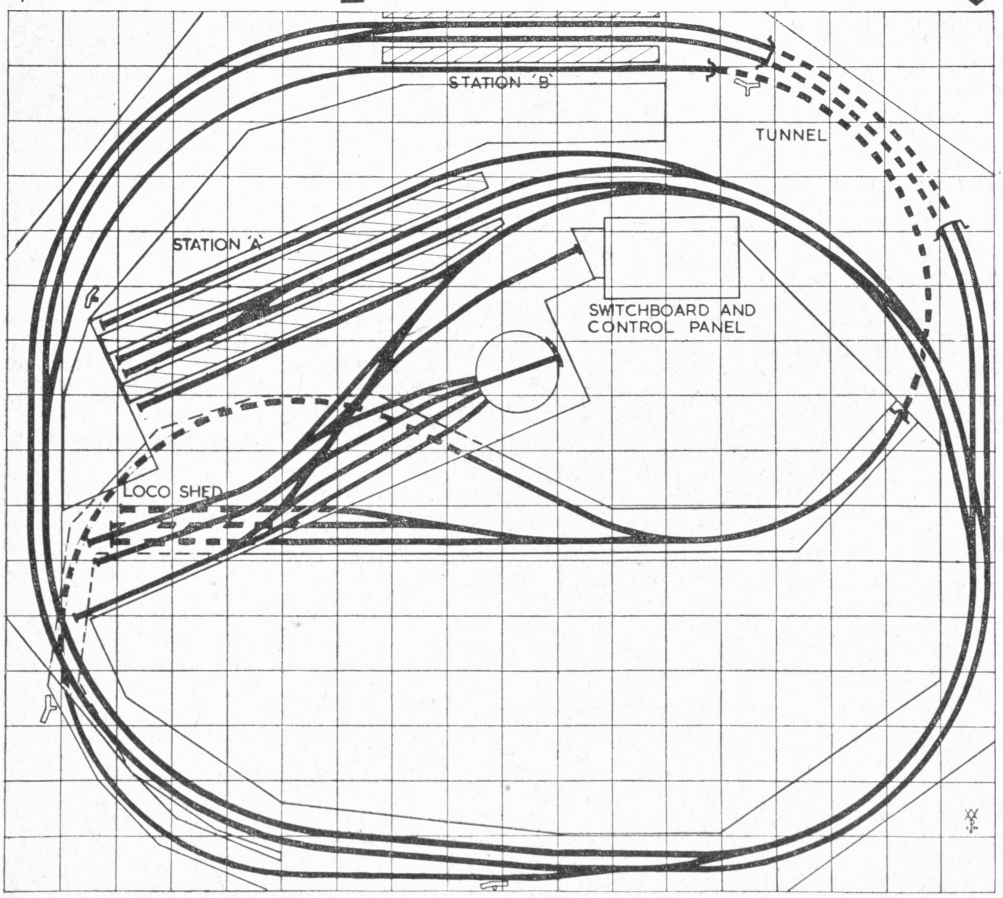
Examining Station "A" we see that the tracks are not laid parallel to the wall of the room and this applies to some of the running tracks. This setting of tracks helps to break down the parallelism of a model railway which is so obviously contained in a room of a rectangular shape. Further, the station has platforms 7 ft. in length thus producing an excellent effect and having a sensible accommodation for trains. Two short suburban trains could stand at one platform.

Each square on the drawing equals one square foot on a 4 mm. scale layout.



Design by L. V. Weedon

Design by W. A. A. Pearson



This "O" gauge fine scale layout is designed to fit a loft, and at the same time to give as large radius curves on the main line as possible. It is developed from two earlier, and smaller, coarse scale layouts.

Continuous running, out and return running, reasonably extensive loco shed facilities and limited opportunities for shunting are provided. The plan is restricted by the need to avoid roof supports.

A double track circles the loft with minimum radius curves of 5 ft. (one) and 6 ft. (three), and branches off to a four road terminal station (A) and engine shed, sidings and turntable. A single line branch leaves the Down Main, falls to low level, forms an S bend and then rises to rejoin the Up Main, thus reversing the direction of travel.

Nickel - silver fine scale rail is used, except on the branch where existing coarse scale brass rail was laid (for economy) to fine scale spacing. Four controllers are built in to one control panel, and operate the Up, Down, Branch and Shed roads respectively.

Points are remotely controlled by rodding, the station at B and the hills over the tunnel are complete, while other scenery and buildings are under construction.

Overall area : 18 ft. x 16 ft. Each square on the drawing equals one square foot on a 7 mm. scale layout.

WIRING COLOUR-LIGHT SIGNALS

by Peter Norbury

ON my excursion into the model railway hobby, I decided to model my layout on the Southern Railway, with outside third rail and colour-light signals. I do not propose, in these notes to enlarge on my reasons for adopting the third-rail system !

I wanted to make as compact a switchboard as possible, and was not bothered, at that stage, about locking the signals to the track circuits. I therefore decided to try to devise some simple system for interlocking the signals electrically, so that a correct sequence could be maintained along the line. Otherwise I could foresee the possibility of a pair of splitting signals both being at " green " at once—an embarrassing position if anyone happens to be watching at the time !

After a certain amount of thought, and the expenditure of numerous sheets of paper, I came to the conclusion that double-pole double-throw switches were the simplest that I could use, and based my design on that fact. As 3-aspect colour-light signals act as " Home " and " Distant " signals at the same time, it was obvious that whilst the red must be individually controllable for each signal, the amber and green would have to be controlled by the next signal down the line. Once this fact is grasped, the wiring diagrams, which may seem complicated at first glance, become in fact quite simple.

The supply is fed in to the centre contact of one of the poles of switch " A," and one of the outer contacts is led direct to the red of signal " A." The other outside contact is connected to the centre one of switch " B." The two outer contacts of this pole of switch " B " are connected to the amber and green of signal " A." It will be seen, therefore, that if switch " A " is down it will depend on the position of switch " B " whether amber or green appears at signal " A." This system is carried on down the line, and although the circuit is not easy to describe on paper, a glance at the diagram should clarify it. (Fig. 1).

When a splitting signal is reached only four contacts of the switch are used. The red contact on the main-line signal supplies the current to the green contact of the switch for the splitting signal (Fig. 2). This principle applies also to converging lines.

(To illustrate these points more fully, I have shown the circuits for a simple loop at Fig. 3.)

These notes may cover a subject which is quite common knowledge to more experienced modellers than myself, but others may find them useful. If it is desired to tie in the track circuits with the signalling system, it will be seen clearly that if triple-pole double-throw switches are used, the third pole can be used for this purpose, thus precluding the possibility of trains " passing the red."

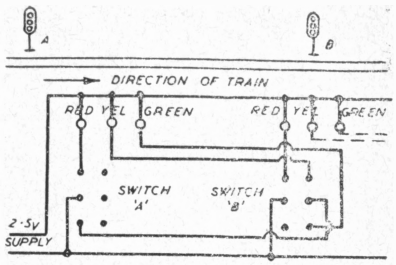


FIG. 1.

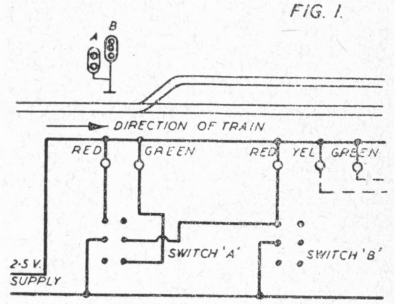


FIG. 2.

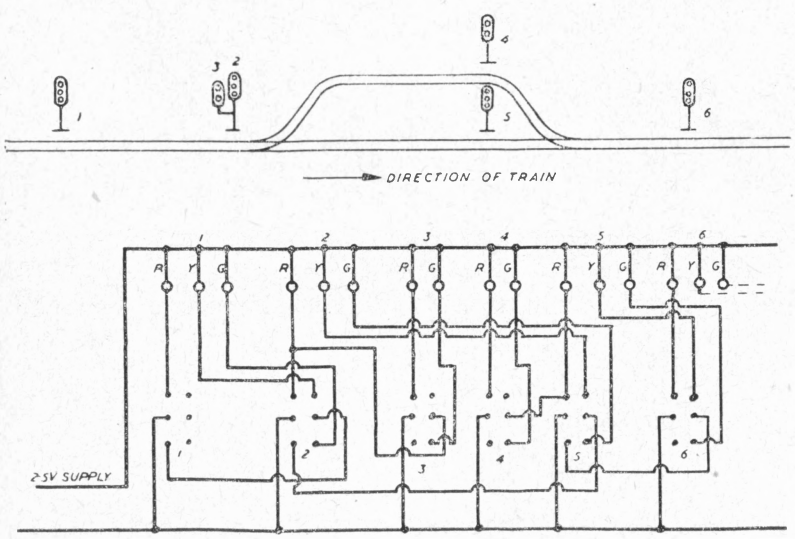


FIG. 3.

RAILWAY TOPICS

(*Continued from page 32*)

five, together with the four survivors, put in a further nine or ten years of hard work, which is proof enough of their excellence and usefulness.

In the early 1900s, some of these engines received new and larger boilers, 4 ft. 6 in. dia. and pitched 7 ft. 4 in. from rail level ; most, if not all of these reboilered engines received Drummond chimneys, but in every case the domes were larger and placed further forward on the boiler barrel.

The original style of painting was a dark brown picked out with light green and orange lining. After about 1885, this was changed to a very dark green, almost black, with fine, bright green lining ; and it was in this style that all these engines were painted when I knew them. The original numbers consisted of brass figures set very low on the cab panel ; but by my time, Drummond had altered these to his standard transfer figures set in the middle of the panel.

I am glad to have known these engines ; there was something fascinating and attractive about them, even to my boyhood mind, and I always enjoyed seeing one. But, of course, they had nothing of the grandeur, stature and dignity of the glorious Adams " T6s " !

P.O. WAGONS

TWO LETTERING DIAGRAMS

by P. Matthews

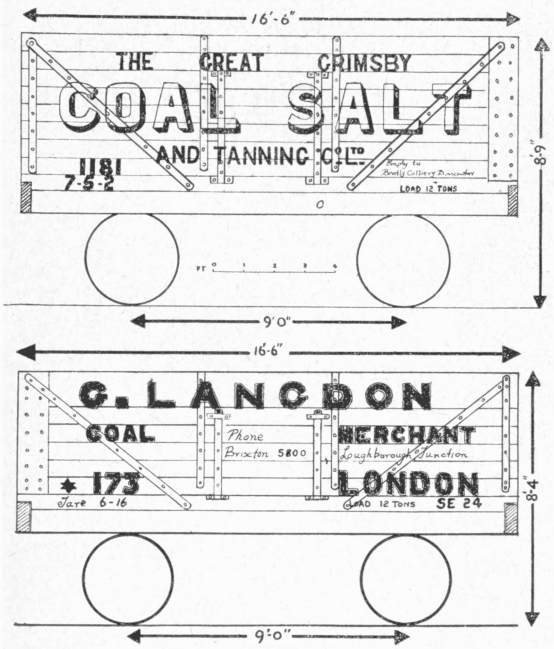
HERE are two drawings of privately owned coal wagons, now "extinct," which should interest modellers with pre-nationalisation or free-lance layouts.

The drawings, which are reproduced to 4 mm. scale, are intended mainly as lettering diagrams and so all underframe detail has been omitted. This can be obtained from other sources as, in many cases, wagon underframe details differ very little. The photograph of the "Grimsby" wagon is reproduced by courtesy of the Derbyshire Carriage & Wagon Co. Ltd., and shows the main features of the usual arrangement of running and brake gear as well as the solebar detail.

The "Grimsby" wagon has a standard eight-plank body with end and side doors. The body colour is black and all lettering is white, the large words "Coal Salt" being shaded below and to the right in red. The small lettering in the bottom right-hand corner of the side reads "Empty to Bentley Colliery Doncaster."

I also remember seeing the same type of wagon with the body dark grey instead of black but with an identical arrangement and colouring of lettering.

The "Langdon" wagon hails from London and has a standard seven - plank body with side doors. The body colour is pale yellow with the main lettering black, outlined in white. The smaller lettering is black with no outline. On other wagons owned by this firm, none of the lettering had outlines.



FOR THE BOOKSHELF

We have received a copy of No. 14 of the *Journal of the Irish Railway Record Society*, and among the varied and interesting contents is a very informative article dealing with the Dublin and Blessington Steam Tramway. The history of the line is given in some detail, and there are some anecdotes that may be new to many readers. The locomotives, stock and equipment are fully described and illustrated; they would make extremely interesting models, and we particularly commend this article to the attention of our readers.

The other articles in this number are contributions to Irish railway history, the most important of which, perhaps, is the one entitled "The Atmospheric Railway Episode," describing the experimental atmospheric railway installed in 1844 between Kingstown and Dalkey on the Dublin and Kingstown Railway.

Copies of this journal may be obtained, price 5s., from Mr. John O'Meara, 116, Lower Baggot Street, Dublin.

British Railway History, by C. Hamilton Ellis. (London: George Allen & Unwin.) 443 pages. 6 in. by 9¼ in. Illustrated. Price 30s. net.

This book is, presumably, the first of a series in which a general outline of the railways of Britain will be published. Hitherto, nothing quite like it has been found in all the great mass of railway literature, and we think that Mr. Ellis is doing a real service in attempting to fill the gap. The period covered is 1830-1876.

The book is a handsome volume and well produced. The introduction, contributed by Canon Roger Lloyd, points the reasons why such a book should be written, and Hamilton Ellis has certainly made a brave attempt; he has succeeded in bringing to light some new facts, and he has provided a satisfactory summary of old ones.

There are forty illustrations, printed on art-paper inserts, and there are a few very choice ones among them. Others have rarely been seen before, though there are several that have frequently appeared in print. The frontispiece is a reproduction in colour, from one of Hamilton Ellis's own paintings, and is a pleasing study of a scene at Guildford station, L.S.W.R., in the 1870s.

We commend this volume to our readers, while expressing the hope that one or two slips in the text may be corrected in due course.

The Locomotives of the Great Western Railway, Part 7. Published by the Railway Correspondence and Travel Society. 52 pages, 6 in. by 8 in. Numerous illustrations on 46 art-paper inserted pages. Price 8s. 6d.

This is actually the fifth part, in order of publication, and is a more than worthy addition to the series. It deals with the larger tender engines of William Dean and covers one of the most interesting periods in the development of Great Western Railway locomotives. Twelve main classes of engines are included, and the chief interest centres in the astonishing variations of detail that were introduced in them during the course of years.

By careful forethought and planning, the text sets down a scrupulously ordered and chronological record, beginning in 1894 and carrying it, where necessary, right up to the 1930s, or even later. A truly vast quantity of information has been most meticulously collated, sorted, arranged and, where appropriate, tabulated. The illustrations are a "history" in themselves; that they could not all be of first-class quality does not matter very much in a book of this nature, for each one serves a definite purpose. We are surprised, however, that the author and editors, apparently, have failed to notice that the illustration of engine No. 3065, *Duke of Connaught*, is not of that engine, in spite of the name and number that appear on the print. We know nothing of the circumstances in which, some sixty years ago, the original photograph was issued; but we *do* know that a close scrutiny of it reveals the fact that the engine is actually No. 3046, *Lord of the Isles*! This is the only real blemish that we can find in an otherwise more than admirable production which is, at the very least, equal to any of the parts previously published. Copies are available from Mr. D. H. Wakely, 18, Holland Avenue, Cheam, Surrey.

EDITOR'S MAILBAG

Pulse Power

DEAR SIR,—In view of the amount of space given to this subject, I feel I must record my experience and pass on the benefit (?) to others. I experimented with a transformer/rectifier to produce ½ wave rectified current for my layout and was profoundly disappointed with the results. I tried several different circuits but my locos gave very indifferent performances They were slow indeed but had no power at the draw-bar at all.

It may be that the fault lay not in the system of producing the current (my apparatus gives 13-15 volts at 3-4 amps) but in the locos themselves, as they are probably not mechanically perfect enough to run on a pulsating current as they have done heretofore on battery d.c.

This situation led me to try yet another method—why not have the best of both worlds ? I have evolved a circuit in which the switch for selection of full or ½ wave rectification is replaced by a wire wound variable resistance. With this I can select a varying mixture of d.c. and pulse which suits any particular loco or operation and the performance given by this arrangement has been all that could be wished.

Yours faithfully,
London, N.20. JAMES HODGSON.

An Appeal Answered

DEAR SIR,—Regarding my appeal of last August which you so kindly published, may I, on behalf of the children of St. Monica's thank you, and all the people that helped us.

I believe I replied to all who wrote to me but, just in case I overlooked anyone, may I again say " thank you." The response was very generous indeed.

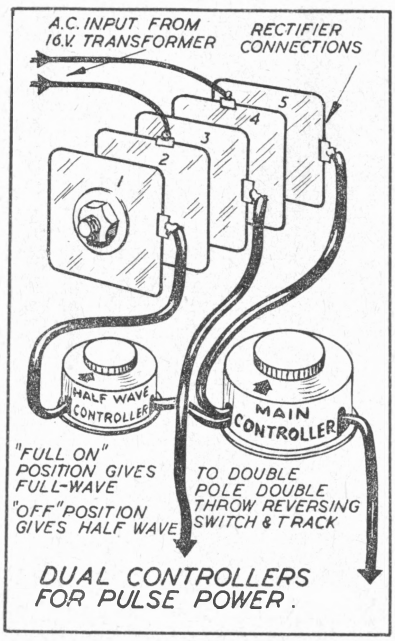
Yours faithfully,
E. M. BUCKINGHAM.
(Master).
Church of England Children's Society,
St. Monica's, Windmill Lane,
Ashbourne, Derbyshire.

Highland Transport Exhibition

DEAR SIR,—The opening of the Inverness to Nairn Railway on November 5th, 1855, saw the beginning of railway development in the Highlands. This year, to mark the centenary, celebrations will be held including an exhibition showing the progress of transport in the Highlands during the past 100 years.

A committee has been formed, under the chairmanship of Bailie R. R. MacEwen, to make arrangements for this exhibition and plans are already well advanced. The exhibition period has been provisionally fixed for two weeks at the end of July and beginning of August and it is hoped to collect together a large number of exhibits to illustrate the modes of transport and travel in the Highlands during the past century.

While it is intended to show all modes of travel—steamer, coach and so on—emphasis will centre on the developments of railway transport in the Highlands and the committee would be grateful if anyone willing to lend exhibits, or who know where such exhibits can be obtained, would get in touch with them, through Miss M. O. MacDougall, The Public Library, Inverness. At this stage it is only information which is required. Actual articles should not be sent.



Mr. Hodgson's pulse power circuit

It is felt that many interesting links with the old railways must still be in the possession of old railway workers and other interested parties. Uniforms, caps, badges, photographs, models, railway guides, time-tables, waybills, etc., would all help to make the exhibition more interesting and no matter how unimportant such things may seem, the committee would be glad to hear of them. As other modes of travel will be exhibited any materials likely to be of interest would be greatly appreciated. In short anything likely to have any bearing upon transport in the Highlands would help to make the exhibition of greater public interest.

The Highland Railway was merged with the L.M.S. in January, 1923, and the committee would be pleased to have any relics of the old " Highland " covering the period from the opening in 1855 to its merging with the L.M.S. in 1923.

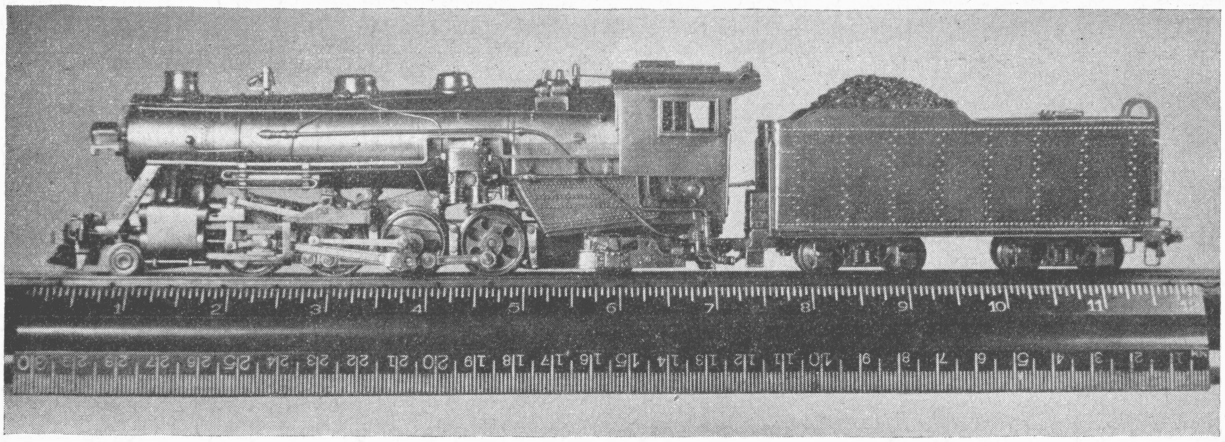
Yours faithfully,
(Miss) M. O. MACDOUGALL.
Inverness. For Exhibition Committee.

Planning Layouts

DEAR SIR,—Let me say at the very outset how much I have enjoyed Mr. Wickham's articles on scenery and that many of his ideas have been incorporated into the Sherwood Section of the L.M.S., and we hope to introduce still more ! In his article in the November issue he contends that the work of maintaining a fully scenic line can keep its owner fully occupied. With this I well agree, knowing that from my own experience of over 30 years that there is *always* some improvement to be made on a layout of whatever type it is without resorting to altering the tracks.

He also contends that the work of modelling a small section as perfectly as possible will keep its owner occupied for years. Again I agree, but will he remember please that some of us don't want to spend all our lives making one model layout so accurately perfect that it is a matter of wonderment to onlookers. We, of the Sherwood, aim at a standard that we consider reasonably high without everything being meticulously perfect and if Mr. Wickham will examine some of our rolling stock on the L.M.S. stand at any Model Railway Club Exhibition, he can decide for himself how far short of perfection we fall.

I presume that the Sherwood section falls within the category of lines that " twine themselves into convolutions." We have located ten stations on an " O " gauge layout into a space approximately 23 ft. by 17 ft., by using three levels but we have kept all stations clear from each other and there is a reasonable length of run between stations. Each station is distinct so that photographs of one do not show the platforms of two or three others ! I agree that to model to scale would barely permit one station within the available space : but we can and do run every conceivable type of train and traffic on the line during a complete twenty-four hours timetabled day. Traffic regularly operated include Royal Mail, sleeping car express, parcels, milk, milk tank, oil, timber, fish and permanent way workings as well as the normal main line, branch, local and " push and pull " passenger trains. With six operators and four different periods to be worked, there become twenty-four combinations of location and timing so that " operational boredom " is impossible. On Mr. Wickham's proposed layout it does seem to me that the maximum possible number of trains that can be worked is four and whilst I fully agree that such a layout would be scenically and architecturally near perfect, let no one be misled that the traffic-minded section of enthusiasts



A ⅛-in. scale 2-8-2 locomotive made in 1,000 hours spare time by Mr. Gordon Douglas of Ontario, Canada

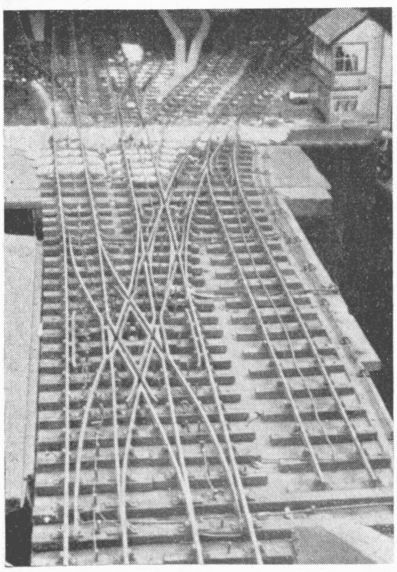
would not soon tire of the very limited variety of operations that could be performed.

Every model railway enthusiast is an individual with his own ideas as to what he wants : but if Mr. Wickham will accept an invitation to visit the Sherwood section of the L.M.S., I will endeavour to show him a model layout on which every train is operated for a distinct purpose and where we believe we are " far removed from the childish pleasure of the fairground."

Yours faithfully,
Pinner, Middlesex. N. S. EAGLES.

" O " Gauge Pointwork

DEAR SIR,—The enclosed photographs might be of interest to readers contemplating involved pointwork. It shows a " standard " 7 mm. scale scissors crossover with double slip and was constructed with the minimum of equipment for my Mid-Lincolnshire Railway. It is electrified with the stud contact system and the whole of the central diamond is soldered down solid on to brass strips mounted on the sleepers. The slips are dealt with similarly. This method ensures that everything remains solid and, if well laid in the first place, gives trouble-free running. The radius of the curves is 4 ft.



7 mm. scale scissors crossover with double slip described in Mr. A. G. W. Garraway's letter

The fine sets of point blades for the crossover roads are operated from one lever, through " T " cranks situated on the ends of long sleepers. The rodding has box nuts with left and right hand threads, making adjustment easy between any set of blades and the signalbox lever.

The outer end of the double slip (nearest the camera) works in conjunction with the points to the headshunt as a normal crossover and this linkage is also equipped with box nuts.

Through points, the connecting wire for the studs is carried over the top of the sleepers. On plain track, however, there are no studs as the copper wire itself gives sufficient electrical contact and is hardly noticeable on ballasted track.

Yours faithfully,
Wanstead, Essex. A. G. W. GARRAWAY.

A ⅛ in. Scale 2-8-2

DEAR SIR,—I am enclosing a photograph which I thought might be of interest.

This model 2-8-2 built to a scale of about ⅛ in. to the foot, took first prize at the International Hobby Show in Toronto in 1953, and also second prize at the Vancouver Hobby Show the same year.

All of the parts (except the six volt motor which was purchased) were machined from solid bar and rod stock, brass, steel, and bronze, on an Atlas 6 in. lathe (3 in. centre height) and a Delta drill press. A variety of home-made equipment was also used, such as a vertical slide for milling in the lathe with a large assortment of cutters, mostly made as the work on the locomotive progressed, with some of them made just to do one job. A home-made toolpost grinder was also pressed into service and on this particular job did more milling than grinding as I built it with a hollow spindle and a set of collet chucks which, together with various home-made cutters and some dentists' drills, proved invaluable for milling out the cranks for the drivers and many other tricky little jobs.

The locomotive wheels are all sprung, the drivers having dummy springs above the frames " for show " and working springs on the inside of the frames. The tender trucks, or bogies, are unsprung.

The boiler is machined from a length of bronze bushing stock with a space milled out at the firebox to accommodate the motor. Power is delivered to the driving axle through a steel worm and brass worm gear enclosed in a brass gear box and running in oil. Coupling rods are properly jointed and the valve gear works perfectly. The cab and tender are built up from brass shim stock 15 thousandths thick, the rivets being pressed in with the aid of a simple punch and die used in the drill press. Brass and copper wire was used for piping, and as any piping extending below the boiler is cut behind the running boards, the boiler and cab together with all attachments can be lifted off for motor adjustments, by removing three screws.

The engine is arranged for two rail running, the drive wheels on the left side being insulated at the rims, while the front and trailing truck wheels on the same side are insulated with plastic bushings. The tender truck wheels are insulated on the right side in the same manner and a special insulated coupling of my own design is used between engine and tender.

The model required about one thousand hours of spare time to complete, is about twelve inches long overall and weighs two pounds.

Yours faithfully,
Ontario, Canada. GORDON DOUGLAS.

TALKING SHOP

ON this page is a photograph of the La-Ron "OO" gauge "Everyman," a medium-size 12v d.c. motor recently placed on the market by CHERRY'S (NORTHERN) LTD., 154 Whitley Road, Whitley Bay, Northumberland, who invite trade enquiries.

The picture shows the general layout of the design which includes a 5-pole armature and an Alcomax magnet. On the sample inspected, we noticed end-play of about 1/32 in. on the armature shaft, which, speaking for ourselves, we would like to see eliminated in the interests of quieter and smoother operation.

The motor is not too large and should fit into a great many locomotive bodies. Useful dimensions are: overall length from the back of the magnet to the outer end of the armature shaft, 2¼ in.; length from rear of magnet to end of front bearing, 1⅞ in.; width over frame, 7/16 in.; total width (over brushgear), ⅝ in.; depth of frame, ¾ in.; total depth including brushgear, ⅞ in.

There is no definite provision for anchoring the motor to the frames, such as bolts or tapped holes, but the enthusiast with the necessary taps will be able to make his own fixings, probably to the brass plate which encloses the magnet. Some might even consider soldering this plate to a frame cross-member unless a floating "nose suspension" is required.

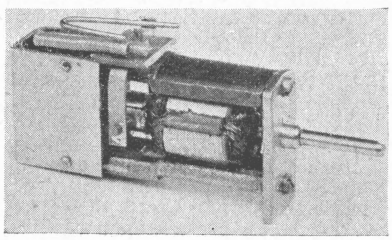
The price of the motor is 26s. 10d., post free, including purchase tax.

* * *

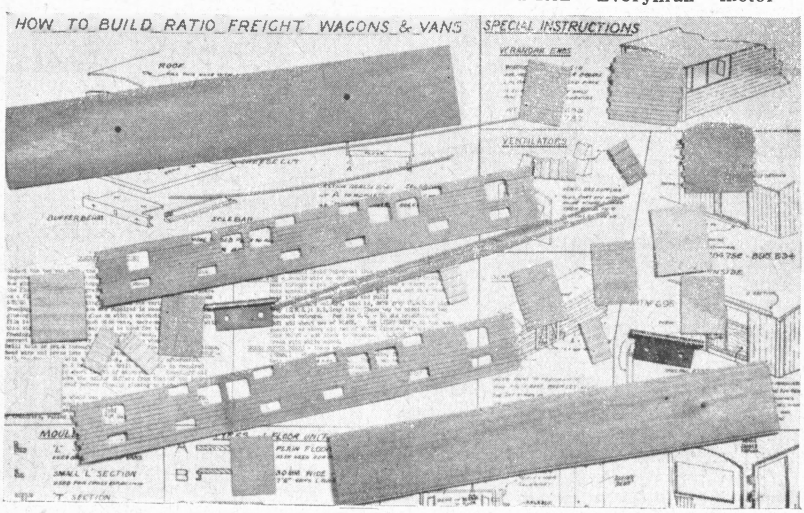
CCW PRODUCTIONS of Chichester, Sussex, now have available their Type B kit, No. P81 H (4 mm. scale) for the "Brighton Belle" Pullman electric motor coach, price 16s. 4d. Main feature of the kit, illustrated on this page, is the inclusion of cast metal units which make up the ends of the coach. This will be a particularly popular move where Pullman's are concerned since the difficult roof contours and sunken doors are all incorporated in the castings. All the metal and wood parts have locating rebates or tongues for easy assembly though, in some cases, the metal parts may need some fitting up with a file. As the alloy used is quite workable, however, any necessary jobs like this will simply add to the interest of building the kit. The wood parts are in well seasoned mahogany, cleanly cut to shape and, in the case of the floor, the whole area is provided since, in model form, these electric units normally have a motor bogie in only one motor coach. If a motor bogie is to be fitted, a rectangle can easily be cut with a drill and fretsaw and a pivot arranged on the underside of the roof.

A short instruction sheet is enclosed, as well as a reprint of two M.R.N. articles on model Pullman construction. No scale drawing of the prototype vehicle is included and modellers are advised to consult the corresponding blueprint produced by John E. Skinley, of Southend.

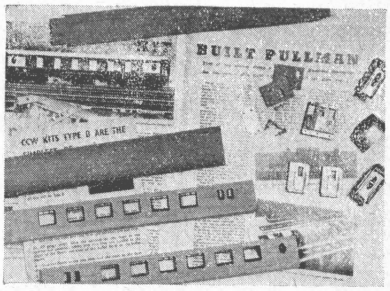
CCW announce that, as soon as possible, all their kits will conform to type B, with fully detailed cast ends for both 4 mm. and 7 mm. scales.



The La-Ron "Everyman" motor



"Ratio" kit for S.R. bogie passenger luggage van



Some of the pieces in CCW's kit for the "Brighton Belle" motor coach

Samples of the new "Ratio" van kits have come to hand from WEBSTER DEVELOPMENT CO., Denham Way, Rickmansworth, Herts, and they include new instruction sheets, one of which forms the background for our shot of Kit. No. 988 for the S.R. Bogie Passenger Luggage Van in 4 mm. scale which costs 9s. 11d. The other kits are No. 688, G.W. Siphon G.; No. 888, N.E. "Covfit" (Bogie Fish Van); and No. 787, L.M. Breakdown Van. All of them include precision cut ply sides with planking scored on, ends, floor and solebar, and sufficient lengths of the appropriate L or T section strapping.

Another little item which accompanied the batch was the "Ratio" A/1 Four-wheel Accessory Kit, retailing at 3s. including tax. Basically, this is a running gear kit for 16.5 mm. two-rail vehicles and includes buffers, two pairs of insulated wagon disc wheels for scale or Hornby Dublo, two brass bearing brackets which are easily screwed or glued to the floor, and four plastic axleguard mouldings. The axle ends carry pin-point bearings and the brass brackets can be adjusted to fine limits.

* * *

Anyone with a road system on their layout will want to know about the neat working lamps and street signs produced in 4 and 7 mm. scales by PETER CARTER of 11 Horton Grange Road, Bradford 7, Yorkshire.

All the lights in the range are fitted with specially designed 14V. lamps which give a scale illumination and have great durability. Street lights are available in the older "lantern" pattern or in fluorescent and sodium types. One of the nattiest items in the list is a pair of working beacons for pedestrian crossings, which, when operated through a flasher unit, realistically switch on and off 40 times per minute. Heavy duty lamps are fitted to these beacons to withstand the continual switching. A price list giving details of the complete range is available from the above address.

WITH THE CLUBS

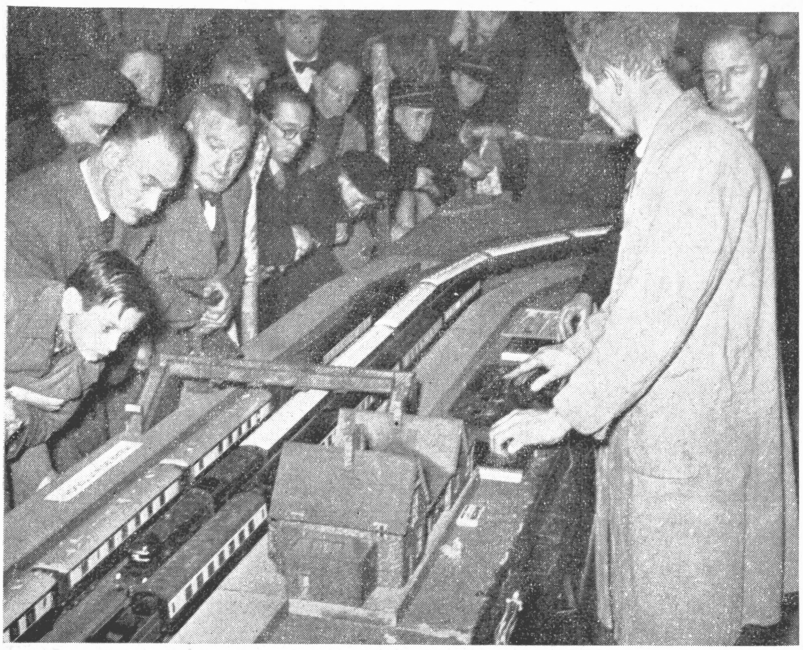
The Model Railway Club

There is a lecture at Caxton Hall, London, S.W.1, on February 3rd, by Mr. J. N. Maskelyne on "The L.B.S.C.," commencing at 8 p.m.

February 17th is an L.M.S. Track Night and February 24th is a special meeting for press photography of models to be shown at the club's 1955 exhibition. Both these meetings are at 7.30 p.m. in the Ambulance Room, Waterloo Station, London, S.E.1.

At a recent meeting, the committee were glad to accept applications for affiliation from the Orpington & District Model Railway Club and the Epsom & Ewell Model Railway Club.

Hon. Secretary : D. A. BOREHAM, 34, Shrewsbury Road, London, N.W.10.



A fascinated crowd watches trains operated by Jim Lloyd on the Manchester M.R.S. "O" gauge track during their pre-Christmas exhibition

Manchester Model Railway Society

The following is our programme to August :

February 12th	Annual general meeting.
March 12th	"Clockwork Modelling on the L.N.W.R." Mr. F. Shaw, followed by the annual dinner.
April 2nd	"Scenic Modelling," by Mr. R. W. G. Bryant.
May 14th	"Modelling the Locos of the Orient," by Mr. G. Pochin.
June 11th	"Modelling Northern Tramways," by Mr. G. Oakley.
July 9th	Talk by Mr. T. Morris.
August 13th	Open meeting at the Hut.

Hon. Secretary : E. A. CASTLE, 119, Church Lane, Moston, Manchester 9.

Coming of Age of Coulsdon Model Railway Society, 1955

In the year 1934 two railway enthusiasts, unknown to each other, were travelling from Coulsdon to London and were both observing some matter of railway interest at the lineside. They got into conversation, and at the next station joined forces. As a result of this meeting the East Surrey Model Railway Society was formed and continued its meetings until, in 1940, war conditions and the scattering of its members, caused it to close down.

As soon as the war was over an attempt was made to start again, but it was not until 1950 that it was found possible to do so and under its new name of Coulsdon and East Surrey Model Railway Society it flourished anew. Later the East Surrey was omitted from the title and now, as the Coulsdon Model Railway Society, meetings are held on 1st and 3rd Mondays in each month, at the headquarters on Platform 2, Coulsdon North Station, where prospective members are always welcome.

Particulars may be had from the Hon. Secretary : N. DAVISON, Friars Oak, Bradmore Way, Coulsdon, Surrey.

Leicester Model Railway Group

The next meeting will be held in the hall of the Church of the Martyrs, Westcotes Drive, Leicester, at 7.30 p.m. on Tuesday, February 15th, 1955, when Mr. Webster will give a talk on "The Great Central Railway."

Hon. Secretary : E. P. M. HAIRS, 29, Park Hill Drive, Leicester.

Birmingham Model Railway Club

The following is our programme for the first session of 1955 from February onwards :

Feb.	3rd Thurs.	Mr. J. P. Addenbrooke : "Model Railway Operation."
	9th Wed.	Track Night.
	17th Thurs.	Mr. T. W. Bourne : "Prototype Building Practice in Relation to Models."
	23rd Wed.	Track Night.
Mar.	3rd Thurs.	Mr. H. Woodward : "Twenty Years of 'O' Gauge Garden Railways."
	9th Wed.	Track Night.
	17th Thurs.	Mr. J. N. Maskelyne : "The G.W.R. in 1905-10."
	23rd Wed.	Track Night.
	31st Thurs.	Annual general meeting.
April	6th Wed.	Track Night.
	14th Thurs.	No meeting.
	20th Wed.	Track Night.
	28th Thurs.	Mr. A. Lee : "Mechanisms and Transmission."

Our new combined 2- and 3-rail layout is now beginning to take shape. It is envisaged that the main lines will be laid by next spring.

Hon. Secretary : G. R. DRIFFIELD, 2, Warwick Place, Francis Road, Edgbaston, Birmingham 16

Wimbledon Model Railway Club

Programme for February 1955 :—

9th, Rummage sale. 23rd, talk entitled "Some Safety Devices on British Railways and London Transport," by Mr. H. P. Roberts.

Visitors are welcome and further information can be obtained from : S. NUTTMAN, 342, Durnsford Road, London, S.W.19.

Bolton Model Railway Circle

The above club has recently been formed and interests include English, American and freelance railway modelling in "HO," "OO" and "O" gauges.

Further particulars may be obtained from the Hon. Secretary: E. D. Whittle, 21, Tavistock Road, Bolton, Lancs.

Norwood Model Railway Club

The club has completed another very successful year during which time much work has been accomplished on the various tracks.

The Junior section has flourished and has completed the "OO" layout for its own use. Work is now proceeding with the scenic side.

The Annual Club Exhibition has been arranged for Saturday, February 26th, and is being held at the Co-operative Hall, Norwood Road, West Norwood, London, S.E.27, opening at 12 noon. The club members look forward to meeting all friends from other clubs once again and anyone interested in the hobby. Particulars as regards membership of the club will be supplied on application to the Hon. Secretary : L. BRAMMA SMITH, 9, Chestnut Road, London, S.E.27.

Southern Counties Railway Society

This society, catering only for enthusiasts living in the south of England, aims to cover some aspects of railed transport which are not already dealt with by existing and larger societies. It has now been in existence for six years and in that time has visited all types of railway installation, not only motive power depots but sleeper works, signalling schools, tube railways and wayside stations, to study these various aspects of railway operation. There is a photographic section and all members receive a monthly news-sheet. The annual subscription is 5s.

Full details of membership may be obtained from the Hon. Secretary : W. A. STEARN, M.Sc. (Econ.), 11, Luccombe Place, Shirley, Southampton. (Please enclose s.a.e.)

Chertsey, Ottershaw, and District M.R. Club

The above club now meets at its new headquarters at 36, Guildford Street, Chertsey, on the 1st and 3rd Fridays of each month at 7.30 p.m.

Work is proceeding on a gauge "OO" layout and anyone interested should contact the Hon. Secretary, F. H. POOLEY, at the headquarters on meeting nights or at his private address, 54 Fordwater Road, Chertsey, Surrey.

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CORRESPONDENCE

The Editor invites correspondence and original contributions on all aspects of model railways in the smaller scales and on suitable prototype subjects which should be addressed to him at 19-20 Noel Street, London, W.1. Telephone: GERrard 8811.

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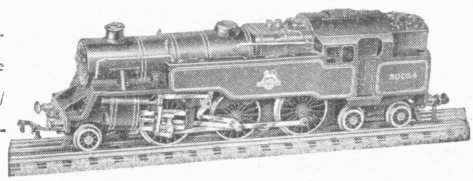

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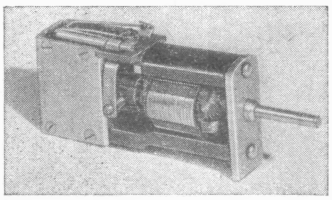

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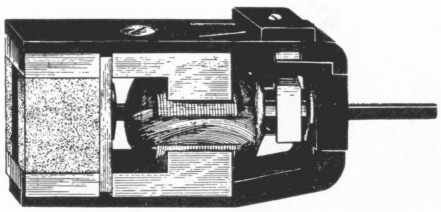

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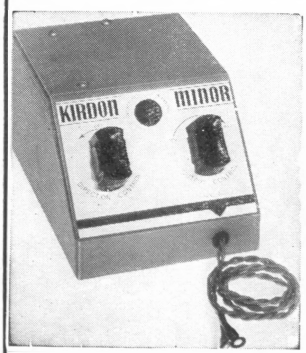

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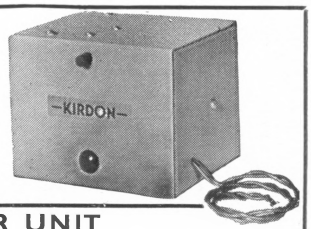

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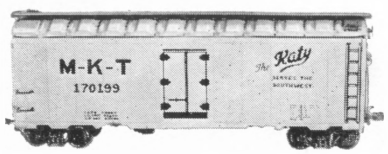

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